

FLIGHT

The
AIRCRAFT ENGINEER
AND AIRSHIPS

First AERONAUTICAL
WEEKLY IN THE
WORLD

Founded in 1909 by Stanley Spooner

DEVOTED TO THE INTERESTS,
PRACTICE AND PROGRESS
OF AVIATION

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A Novel R.A.F. Reserve

FOR years past, *Flight* has been an advocate of the airman pilot in the Royal Air Force. Historically it appears that when the Royal Flying Corps was formed in 1912, with naval and military wings, there was some discussion among the framers of the scheme as to what rank should be borne by the ordinary pilot of the corps. There was no precedent to guide them, and the only fact which they could take into account was that the men who had qualified for "wings" were all officers. It seemed the simplest thing to let things run on as they had started and to lay it down that the pilot should ordinarily be an officer. This idea did not prevail among all European nations.

The need for a great number of pilots who can never rise to high rank has led to the institution in the British Air Force of short service officers. This plan has always seemed to us to be wrong, as it exploits the individual. Unless a man is sure of his future six years hence, it seems to us a very bad bargain for him to accept a short service commission; and it cannot be good for a fighting service to contain a large proportion of men who, whether they feel a grievance or not, are being treated in a not very considerate manner by the State. The only way out of this difficulty is the employment of the airman pilot, which has lately been on the increase. Against this, the authorities argued that a reserve of R.A.F. pilots was necessary, and the short service officers who had done their five or six years with a squadron provided that reserve.

Now a new and important step has been taken. Obviously, with the coming increase of the Royal Air Force some increase of the reserve at the same time was necessary. The new squadrons will presumably contain a number of short service officers who will automatically go to swell the reserve six years later. It would be unwise to wait for them and to take no steps in the meantime. An immediate increase in the flying reserve is clearly necessary.

It may be as well to explain that hitherto the Reserve of Air Force Officers has been drawn from two sources, the short service men and direct entries from civil life. These latter have been taught to fly gratis at the four civilian schools at Hamble, Hatfield, Bristol, and Brough. All reserve officers must put in twenty hours' flying at one of those schools each year, and each one gets reserve pay and allowances of £23 10s. per annum.

In the future the direct entry men will mainly come into the reserve as airmen pilots. The only direct commissions in the Reserve will be given to men who have qualified at the air squadrons at Oxford and Cambridge Universities, which are already a sort of aerial Officers Training Corps, and a recognised channel of entry to a permanent commission in the R.A.F. Only after three years' service as airmen pilots, during which each must fly at least 100 hours, will commissions in the Reserve be given to the best of the direct entry men. The free flying instruction will be given as before. Qualified civil pilots are also invited to join the reserve as airmen, and of course they will not need the tuition.

A Corner Turned

THE Postmaster-General has taken us by surprise. It is a very pleasant surprise, and we beg to offer our compliments to Sir Kingsley Wood. In the recent past we have felt constrained to criticise the attitude of the Post Office towards air mails in general, and we certainly do not recant.

What is chiefly surprising is the selection of inland air services for the carriage of letters without surcharge. The reform which had seemed most urgent was the institution of a reasonable flat rate for Empire air mails. It is still a most desirable reform, and it must come, sooner or later. But, because we have not got our full loaf, we are not going to sniff at the half. The carriage of inland letters by air wherever practicable, *without extra charge*, is a very significant step forward, and we

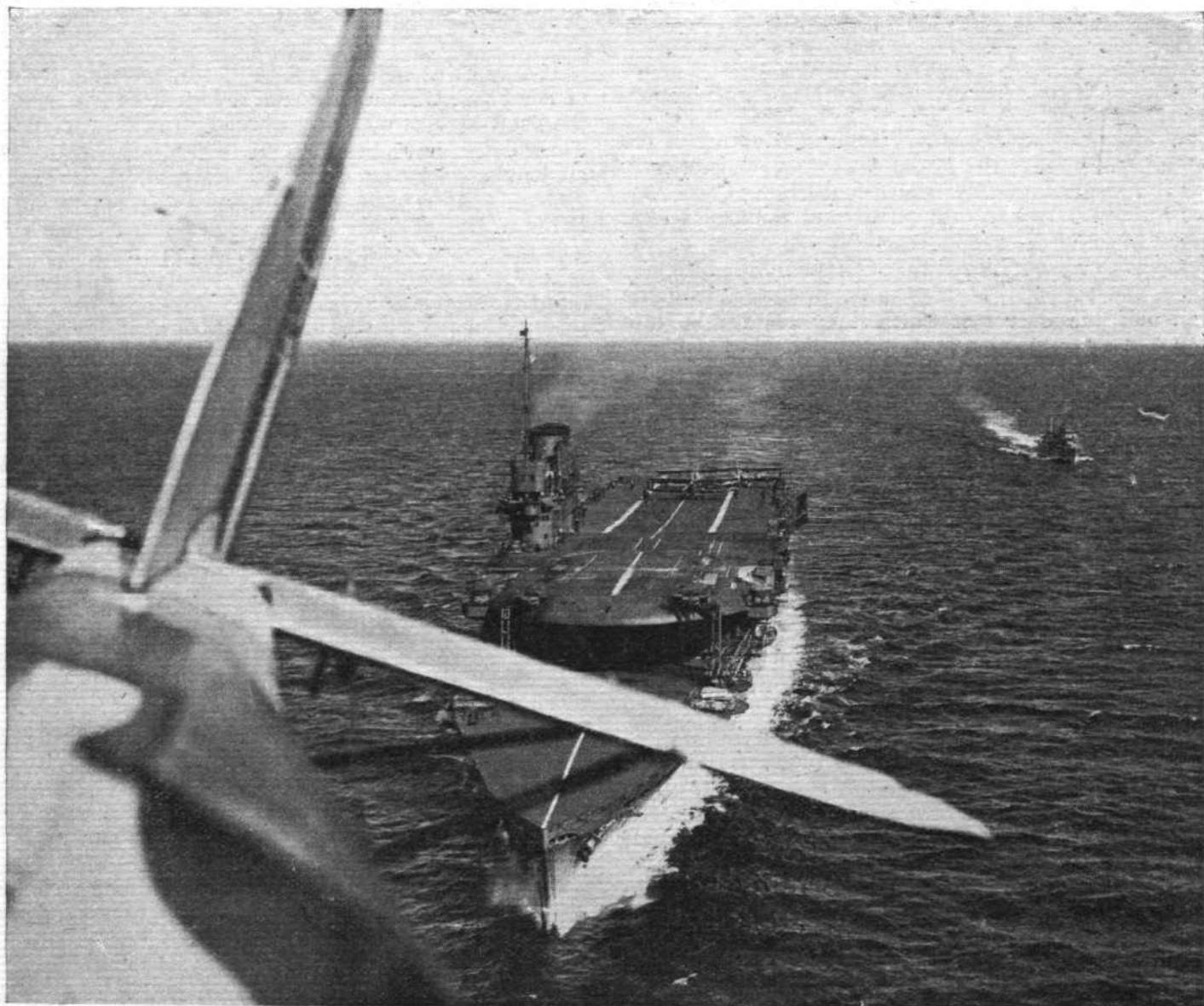
welcome it wholeheartedly. It carries on the tradition of Sir Rowland Hill.

We note that, although no extra charge is to be made for sending a 2 oz. letter by air, it is still left to the sender to decide whether he wishes his letter to go by air or by rail and steamer. He must mark his letter as destined for air transport. It is not necessary to use the new blue label, though it is desirable to do so; if the sender marks his letter "By air mail" his instructions will be carried out, and in this way the necessity for buying special air mail stamps is avoided. Philatelists will grieve over this, but for ordinary letter-writers it would be nothing but a nuisance to have to keep by them a supply of special stamps. Life is sufficiently complicated already, and we do not wish to see additional obligations imposed in order to gratify the philatelists, excellent people though they may be. The reason for leaving it to the sender to decide by which medium his letter is to go must be that the rates are different for letters weighing over 2 oz. Whereas by train post a letter of, say, $2\frac{1}{2}$ oz. costs 2d., by air that letter will cost $2\frac{1}{2}$ d.

In the present case, if the Post Office is not going to make a loss by carrying 2 oz. letters by air for no

additional cost, it hardly seems likely that it would lose by carrying heavier letters at the current rates. If such a chance of loss may be ruled out, then it would surely be preferable in all ways for the Post Office to relieve the public of the onus of deciding whether letters shall go by air or by train.

We are glad to note that the first company to receive the patronage of the Post Office was Highland Airways, plying between Inverness and the Orkneys, because that is what is called a private company, in distinction to Railway Air Services, which to a certain degree is helped by the subsidy paid to Imperial Airways. We have no grudge against Railway Air Services; on the contrary, we hold that if they can give better organisation than private companies can give, then they deserve to reap the harvest. The efficiency of air mail transport is, above all, the interest which we have at heart. We do think, however, that it would be regrettable if the opinion ever were to become accepted that the Post Office was in any way bound to give preference to Railway Air Services on account of its semi-official position. So long as that firm is patronised only on account of superior merits we shall applaud the wisdom of those who patronise it. The principle will doubtless be extended.



WELL AWAY: H.M.S. *Courageous* seen over the tail of an aeroplane which has just taken off from the deck of the aircraft carrier. Note the escorting destroyer.

The Outlook

A Running Commentary on Air Topics

Auxiliary A.F. Fighters

THE Air Ministry has decided, as announced on our page of R.A.F. news, to convert three squadrons of the Auxiliary Air Force from bomber squadrons into fighter squadrons, and to re-equip them with the "Demon" instead of the "Harts" and "Wapitis" which they fly at present. The squadrons selected for this change are the three raised in the London area, namely, No. 600 (City of London), No. 601 (County of London), and No. 604 (County of Middlesex). The former two squadrons now have "Harts" and the Middlesex Squadron has "Wapitis." During the recent Air Exercises the Middlesex Squadron was employed as a fighter squadron.

Without waiting for new squadrons to be formed, this change raises the number of our day-and-night fighter squadrons from ten to thirteen, and our total number of fighter squadrons from thirteen to sixteen—for the "Demon" can be used as a night fighter, and No. 23 F.S. was so employed during the Air Exercises. The change also increases the number of two-seater fighter squadrons which we shall have in the near future from two (Nos. 23 and 41 F.S.) to five. It is evident that the Air Council are impressed with the potentialities of the two-seater fighter, and mean to give a thorough try-out.

Still, we may take it that this conversion of three squadrons from bombers to fighters will not affect the ultimate ration of the two arms when the five-year programme of expansion has been completed. It has been stated that, generally speaking, there will be two bomber squadrons to each fighter squadron, and so in 1938 there should be fifty bomber squadrons and twenty-five fighter squadrons in the Home Defence Force. The real significance of the change is that for the first time the Auxiliary Air Force is to have some fighter squadrons, whereas hitherto they have only had day bomber squadrons. In the early days of the A.A.F. it was not unnaturally held that part-time airmen could never achieve the high pitch of training which is so necessary for the fighter. The whole fighter organisation must work in split seconds if raids are to be intercepted. Could auxiliaries ever attain such perfection? In the early days it was not to be expected that the A.A.F. squadrons would attain the excellence which they actually have attained as bombers. They have surprised everybody, and so the Air Ministry is giving them a chance to rise to the still higher standard of perfection which their new duties will demand.

A Fighting "Pterodactyl"

STUDENTS of air fighting will watch with interest the future development of the first military "tailless" aeroplane to be produced. Designed by Capt. G. T. R. Hill and the technical staff of the Westland Aircraft Works, the "Pterodactyl V" is a two-seater fighter fitted with the new Rolls-Royce "Goshawk" engine of some 600 h.p. Hitherto the "Pterodactyls" have had the engine and airscrew at the back, the pilot being placed in the nose of the tiny fuselage. In the military version of the machine the engine is in the nose, the pilot in the middle, and the gunner in the stern. The extremely wide field of fire provided for the gunner should eliminate blind spots in a rearward direction, and the expression "sitting on his tail," so familiar in the war 1914-18, appears to have lost its significance in the "Pterodactyl V," apart from the fact that one cannot sit on a tail which isn't there. If the new machine comes up to expectations, the whole subject of air tactics may be considerably influenced.

A Quarter of a Century

ON July 25, 1909, Louis Blériot climbed into his little monoplane at Les Baraques, and standing up in the machine he asked, "Where is Dover?" One of the bystanders gave him a general direction with his arm, and Blériot started off and flew the Channel. He was in pain from a burnt foot. His engine was temperamental, and it began to overheat while he was over the sea. He out-distanced his destroyer escort. He could not calculate drift from the wind, and when he sighted land he was opposite St. Margaret's Bay. He found the eddies over the cliffs very difficult to deal with, and he ended his flight in true Blériot fashion by gently crashing his machine. That was the spirit of the early pioneers. When one considers the care with which the modern pilot works out his course before setting off on a cross-country flight, one hardly knows whether to laugh or cry over the heady recklessness and the cold courage of that first Channel flight.

The Channel has claimed victims since then, and it is only a few months ago that an Air France machine completely disappeared after sending out the "Mayday" call. But even railways have their occasional accidents, and nowadays flying the Channel is such an ordinary event that no one thinks of risk when setting out to make the crossing. We have made no little progress in the quarter of a century since that first flight of Louis Blériot.

Air Line Duplication

WHEN, this month, Railway Air Services start their line to Belfast and Glasgow, there will be partial overlapping on a route which, for the present at any rate, hardly provides traffic for one operator. Mr. Hillman, taking over from Mr. Sword, now operates between Stapleford Abbots, Liverpool, the Isle of Man, and Belfast, and the Railway's service will run between Croydon, Birmingham—linking there with the other R.A.S. lines—Manchester, the Isle of Man, Belfast, and Glasgow. Both will probably use the same type of machine in due course, and both will operate once each way daily.

Whatever the rights, wrongs, and needs of the particular concerns, this is just one case where a working agreement should be reached, if at all possible. At the moment inter-service economy is as vital as a complete plan of internal air line operation, if we are not to have the unedifying sight of separate air lines fighting to the death over the body of one fare-paying passenger—who will eventually ride away on a bicycle.

An Attempted Imposition

ABERDEEN Corporation recently applied for a provisional Order which would give them power to purchase compulsorily, at not less than fourteen days' notice, the aerodrome which has been established by Mr. E. L. Gandar Dower at Dyce. The idea of a Corporation being empowered to purchase arbitrarily going concerns of this nature very naturally aroused considerable comment. Fortunately, the attempt of the Corporation to establish a precedent proved abortive; and the case of the Corporation was discredited without much difficulty, upon Mr. Gandar Dower giving an undertaking that he would allow any aeroplanes to use the aerodrome except those purporting to serve areas already adequately served by Mr. Gandar Dower's company, Aberdeen Airways, Ltd.

THE AIR EXERCISES

Dirty Work at the Cross-roads

By Major F. A. de V. ROBERTSON, V.D.

TUESDAY, July 24, was a snare and a delusion. It started in brilliant sunshine, and as the good citizens of Northland awoke and arose they performed their toilets to an obbligator by "Kestrel," "Pegasus," and "Panther" engines. After that the deluge. Consequently, evening raids on targets in London became out of the question, for the clouds came down to the minimum height from which bombing was allowed. The Central Area, therefore, planned a large-scale evening raid on the targets to the East and North of London, and as I was in the confidence of the Higher Commands, I forthwith proceeded to Hornchurch aerodrome in Essex, prepared to witness what we old members of the P.B.I. used to call dirty work at the cross-roads. There was plenty of dirty weather about Hornchurch, but it was not actually raining when the evening strafe commenced. Two fighter squadrons stood ready on the aerodrome, which is a large one. On our right were the "Bulldogs" of No. 54 (Fighter) Squadron with horizontal yellow bands along the fuselage. On the left were the "Furies" of No. 25 F.S., with their squadron marking of two horizontal black bands. A covered lorry was placed in between them as an advanced operations office, as the aerodrome buildings were quite a considerable distance away. This lorry, of course, was connected with the station offices, and Sqn. Ldr. Paxton, D.F.C., was in command in the lorry. We waited, and tried to keep warm while the clouds raced across the sky overhead. Presently a canteen lorry made its welcome way out to us, and warmed and cheered us with cups of tea.

Presently the bell rang in the lorry, and im-



THE C.-in-C.: Air Marshal Sir Robert Brooke-Popham, K.C.B., D.S.O., at Northolt aerodrome watching dive bombing by a squadron of "Harts." Dive bombing is always made out of the direction of the sun. (Flight Photo.)

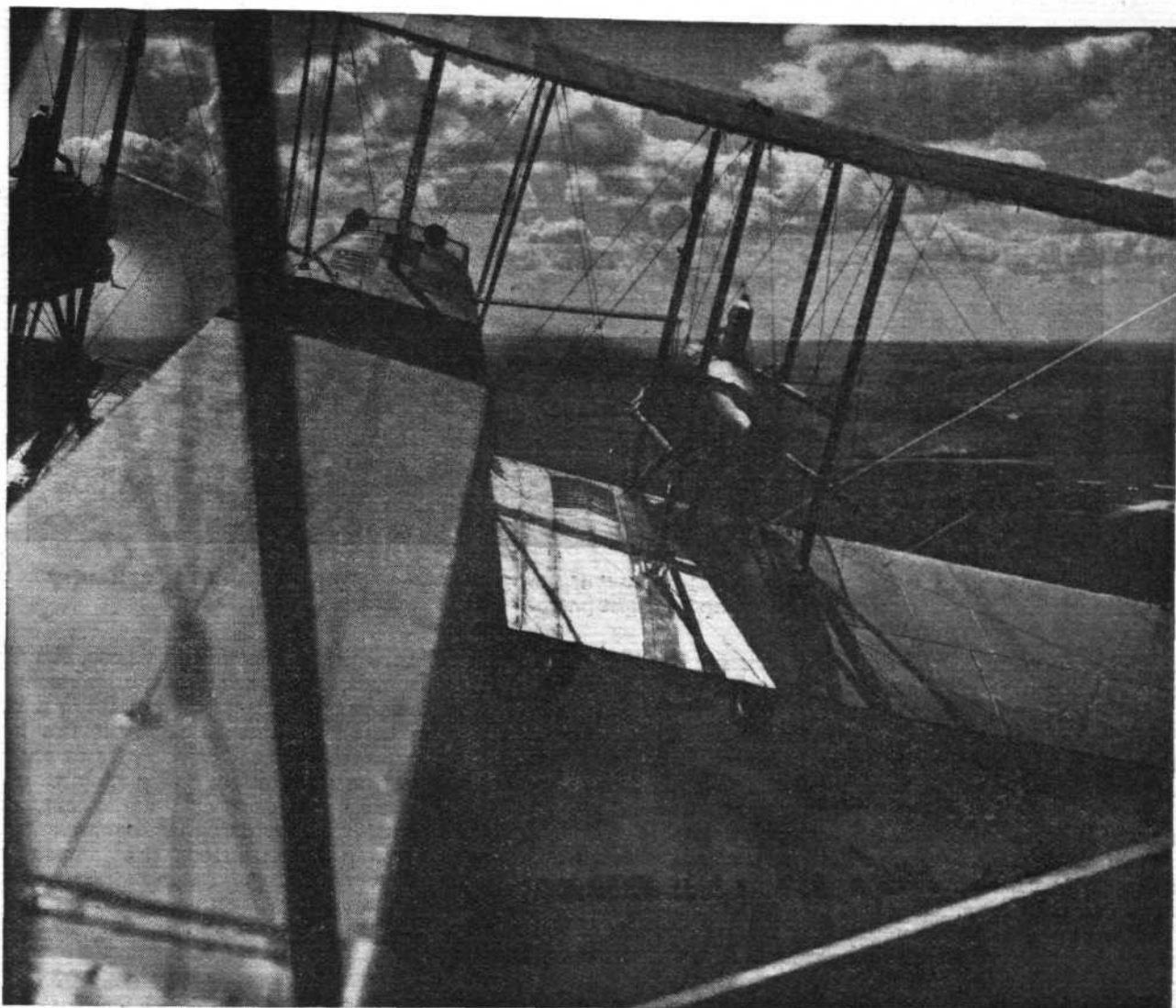
mediately all became activity. The signal was passed to No. 54 F.S., and immediately the nine "Jupiters" gave forth their thunder. One could not help thoughts of Jupiter Pluvius crossing the mind, but they were promptly suppressed. Off taxied the flights, one after the other, and in about thirty seconds the squadron was in the air with orders to patrol over a certain area at 6,000 ft. So something was coming in. A short time passed after the "Bulldogs" had vanished from sight, and then the order came for the interceptors to take off. The "Kestrels" were started, and off went No. 25 F.S. to look for trouble somewhere to the south of us. Shortly afterwards one "Fury" came back and landed with plug trouble, too late for the reserve machine to take its place.

Another period of waiting followed, and the canteen lorry brought out more comfort. Then engines were heard overhead, and presently a bomber squadron was descried. It came very nearly over our heads, and binoculars told us that it was a Cadre squadron in "Wallaces." Hornchurch aerodrome was one of the targets, but one specially intended for dive bombing, and that we did not expect from the "Wallaces"; so we watched without undue trepidation, but very much irritated that bombers should thus sail serenely over a defence aerodrome undisturbed by any fighters. The lay onlooker was inclined to forget that the tactics of the Fighting Area are to move outwards, so as to get depth of defence. Our two squadrons were defending spots nearer to the coast. For our own protection we must look to aerodromes further to our north.

We were not disappointed. The bombers



GROUND DEFENCES: A sound-locator and Lewis gun of a Territorial unit getting a line on a bombing raid. (Flight Photo.)



A NIGHT RAID : A "Virginia" making its way to its objective. The photograph is taken from the cockpit in the tail of the bomber.

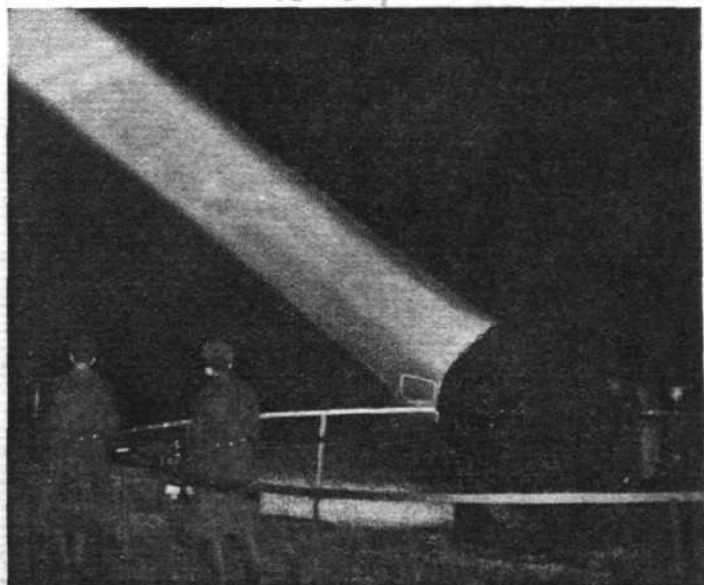
had been cruising about and changing direction as though they had received new orders from a rather puzzled Central Area, and certainly the weather conditions were enough to worry any staff. A new noise was heard in the distance, and soon a squadron of nine "Furies" hove in sight. It could only be No. 43 F.S. from North Weald, for now No. 25 had only eight machines, and No. 1 F.S. has one flight over in Canada. The "Furies" cruised along with engines fairly well throttled down. They were evidently looking for the "Wallaces," but had not yet caught sight of them. We could see both squadrons, and I wanted to shout to the fighters and point out the direction of the bombers. When on fighting patrol the fighters do not keep tight formation. No energies must be wasted in measuring the distance to the next man's wing tip; all nine pairs of eyes are needed to watch for enemy aircraft. Suddenly No. 43 saw its quarry. It was great to see the sudden change as the throttles were opened wide and the "Furies" changed from an almost leisurely amble into a headlong swoop on the enemy. The distance in between the two squadrons vanished in the twinkling of an eye, and before one could say "Jack Robinson" the "Wallaces" had been dealt with. After the attack, it was amusing to watch one "Fury" fly confidently up to the Cadre squadron and formate on it for a few minutes. This was for purposes of identification. Each had to be sure that it had recognised the other, and the umpire in one of the "Wallaces" had to make due note of the interception. Cases have been known in previous Air Exercises when bomber squadrons have been blissfully unaware that they have been attacked at all.

That was the end of the fun, so far as Hornchurch was concerned, for the weather had got so bad that not many

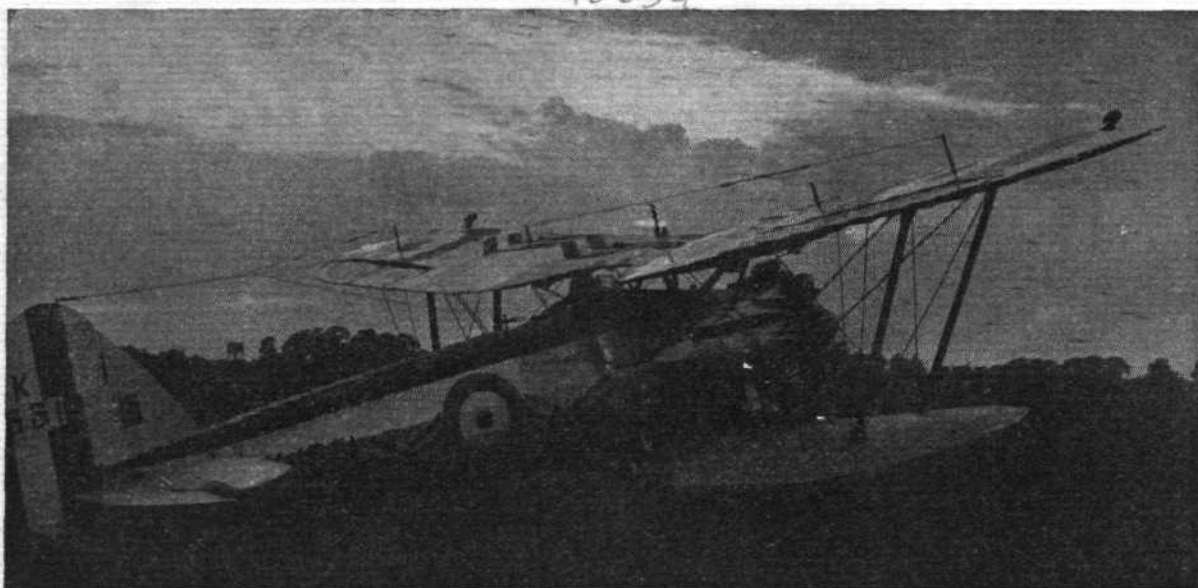
day bomber squadrons had crossed the coast. The rest of the operations were cancelled until midnight.

At an Observer Post

Many is the time that I have expressed my wondering amazement at the excellence of the unpaid work done by



WHERE IS HE? A searchlight of the Royal Engineers of the Territorial Army searching for a night bomber. (Flight Photo.)



READY FOR THE FRAY: A "Bulldog" of No. 17 (Fighter) Squadron waiting at Kenley to go up on night patrol. (*Flight* Photo.)

the Auxiliary Air Force. To do good work for love is a speciality of the Briton. On Wednesday night I witnessed a further and perhaps even more extraordinary manifestation of that speciality. In short, I visited a listening post of the Observer Corps.

It is not such a very simple matter to visit an Observer post. I had to do much telephoning and much badgering of authorities, who seemed rather surprised that I should think such a visit likely to repay the trouble. Then contact had to be made with a colleague who found that short-cuts through unfamiliar country lanes do not always make for expedition. Then a fairly long drive through the gathering darkness, more ferreting, and finally a dive through a hedge down a steepish bank into a meadow on the outskirts of a picturesque village somewhere in Kent. The glow of a brazier then gladdened our hearts, and we actually arrived at the post. Round the brazier was gathered a group of some fifteen men, and we were challenged before we were allowed to join the circle. Once admitted, we were made heartily welcome. It was a very jolly party which we found, all men of the village, and all but two in mufti. The badge of the Observer Corps was in each man's buttonhole, but otherwise there was nothing to show that these were part of the great

organisation on which, in the first instance, the air defence of London depends. It is a handsome badge in blue and white enamel showing a coast watcher firing a beacon on the approach of the Armada. Against the hedge was erected a canvas shelter on a wooden framework, as protection against the weather on rainy nights. An instrument, a very friendly black and white cat, and some mighty bottles of beer completed the equipment. The cat and bottles need no explanation; the instrument was a simple one for giving a bearing on any aircraft which might be seen or heard overhead. Of course, there was also the means of giving prompt reports to the H.Q. of the Fighting Area.

The village postmaster was in command of the group, a genial soul, full of fun and energy. I feel sure that letters are very promptly and efficiently dealt with in his village and district. Two local constables were in the party, the only men in uniform there. The police have to swear in these members of the Observer Corps as special constables, and also have to see that they turn out on the proper nights—though that must be an easy task, judging by the keenness shown by all this party. Mostly, the men seemed to be engaged in local business, and I was not surprised to learn that one at least is a regular reader of "Flight."

The moment that an engine was heard overhead, all the chaff stopped, and every man became alert. The bomber was above the clouds, but a report was sent in of where they reckoned him to be. Other posts would also report, and Fighting Area would be able to form a pretty accurate idea of the course of the raider. After he had passed the zone of the Observer Corps, the sound locators and searchlights of the Territorials would take him on, and finally the night fighters would have a word to say to him.

The Observer Corps gets practice for two nights before the Air Exercises start, when special aeroplanes are sent up for them to spot. During the Exercises they are out for three nights from 18.00 hours to 23.59 hours, while a section are kept on duty to a later hour on the last night.

AT THE TARGET: Beside the camera obscura on the roof of the Air Ministry during an evening raid.





THE DAWN RAID : "Harts" of No. 57 (Bomber) Squadron from Upper Heyford off on a raid over Northland.
(Flight Photo.)

Despite that shortness of training, their reports are remarkably accurate, and come in with sufficient promptness to give the most valuable information to the Fighting Area. The Observer Corps is one of the marvels of our Air Defence system.

Beside the Landing Flares

After driving many more miles, we ended the night of July 25-26 on Biggin Hill aerodrome. By the time that we arrived there the sky had completely cleared, and the moon was nearly at the full. It was a wonderful night, a night for fairies to dance, but not too good for night bombers. Nos. 1 ("Furies") and 23 ("Demons") Fighter Squadrons had moved across the river to Hornchurch, and only No. 32 F.S. ("Bulldogs") were left to hold the pass. As No. 32 F.S. had previously been doing day duty, the officers and men must have been rather tired—in fact, one of them confessed that that was so. The raising of the new fighter squadrons will be warmly welcomed by the ten squadrons of day-and-night fighters. Though at a casual glance everything seemed bright as day, the landing flares were laid out on the aerodrome. Overhead we could see the green and red lights of several "Bulldogs" on patrol, and every now and then one of

them would land. As they got near the ground they almost vanished from our sight, and we realised that all was not as bright as it seemed. On all sides the beams of the searchlights kept appearing and disappearing, hungrily questing the sky for some "Virginia", of whose whereabouts the sound-locators had given information. There was obvious joy among the Territorials whenever a bomber got caught in a beam, and at once all within reach would turn on to him with an almost audible shout of "Me, too!" Sometimes six or seven beams would be directed on to one luckless "Virginia," which was not really economical. Three would have been quite enough. In the clear sky the bomber had little chance of evading the beams; and soon we would see the ominous red and green lights of a fighter scurrying towards the illuminated raider. Then a green Very light would be fired and an interception would be recorded. Many a gallant "Virginia" came (theoretically) crashing to earth as we watched. In the real thing, hell would have been loose that night, but in the real thing the bombers would hardly have pressed home their attacks on such a night. For the midnight onlooker it was a carnival of the sky, and it was with reluctance that at length we tore ourselves away to seek a belated supper and a still more belated bed.



"THERE HE GOES!" A post of the Observer Corps spotting a night bomber somewhere in Kent, and sending the report to Fighting Area H.Q. (Flight Photo.)

THE FOUR WINDS

ITEMS OF INTEREST FROM ALL QUARTERS

Delayed Parachute Record?

M. Evodokimoff, the Russian airman, claims to have beaten the record delayed parachute drop of 20,000 ft. set up last year by Mr. John Trantum by jumping from a height of 25,000 ft., and opening his chute when 1,000 ft. from the ground.

Glider Trains Again

An aerial "train" consisting of a biplane towing three gliders, is to attempt a journey this week between New York and Washington, a glider being "slipped" at Baltimore and at Philadelphia. If the postal authorities sanction the project, each glider will carry 200 lb. of mails.

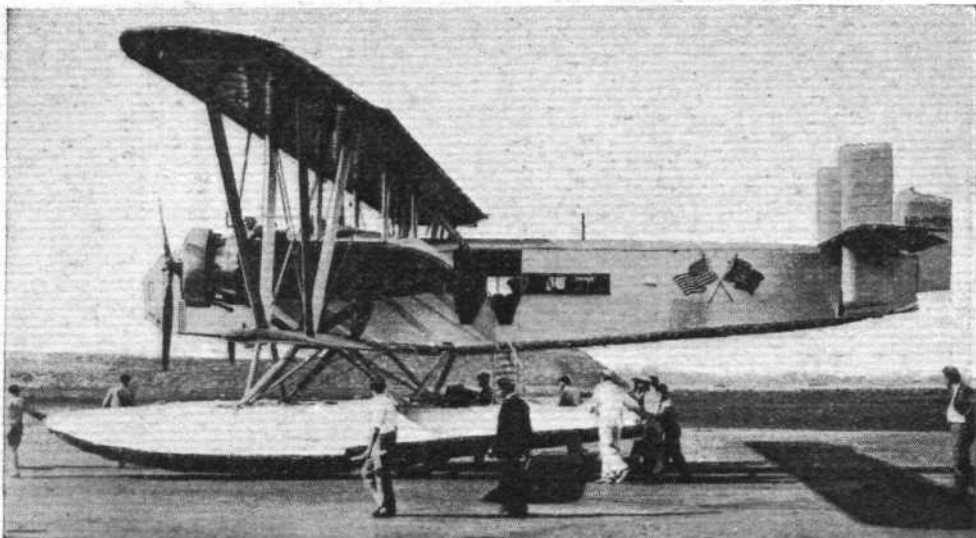
Air Liner's Gold Stolen

A cargo of bar gold being conveyed by Imperial Airways from Central Africa to England mysteriously disappeared after the machine had reached Cairo. The gold was transferred to a flying boat on the Nile, and five and a half hours later it had gone. Two employees, an Armenian and an Egyptian, were arrested on suspicion, and it was thought that they had thrown the gold into the Nile, hoping to recover it later.

Twenty-five Years Ago

From "Flight" of July 31, 1909.

"Flying in Scotland.—Having now completed their biplane, Messrs. Harold and Frank Barnwell have been experimenting with it at Stirling. On Wednesday, with Mr. Harold Barnwell at the wheel, after a run along the ground the aeroplane rose gracefully and flew for about 80 yards, when it suddenly came to the ground. The machine was damaged, and Mr. Barnwell sustained a few cuts, but no serious injury. He attributes the mishap to an error of judgment in steering."



FOR AMERICAN WORLD FLIGHT: The Sikorsky seaplane which, piloted by Fit. Com. William H. Alexander and with about five others aboard, is making a "Goodwill Flight" round the world.

The Helpful Aeroplane

By making use of an aeroplane, Earl De La Warr, Parliamentary Secretary to the Ministry of Agriculture, was able recently to journey from London to Long Sutton, Hampshire, to address a meeting, and then go on to Bexhill, about 100 miles away, to address another meeting one hour later.

New Soviet Semi-rigid Dirigibles

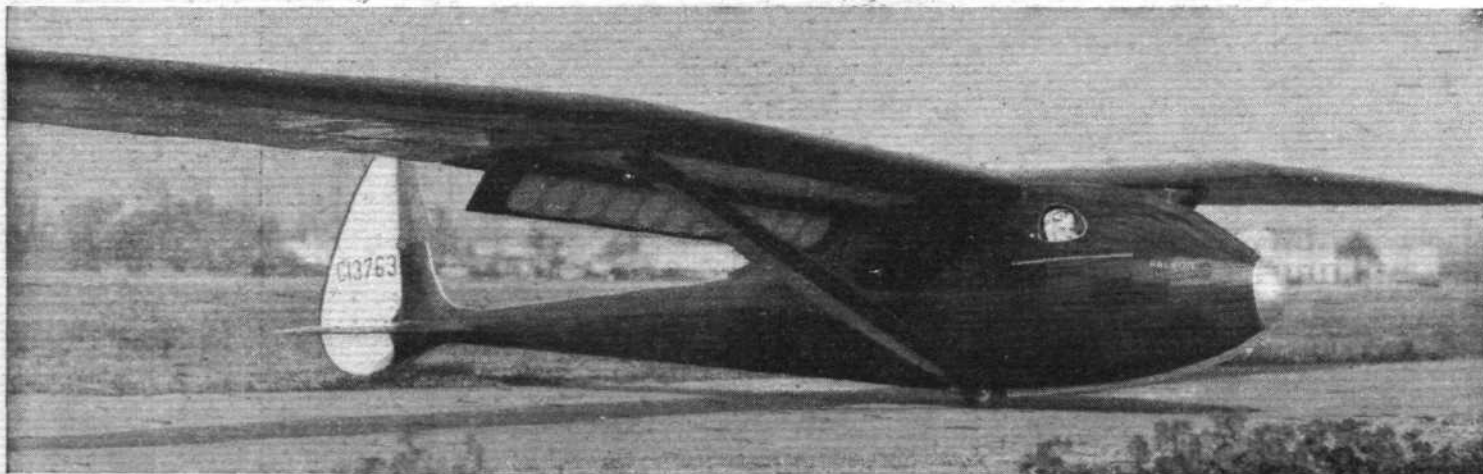
Two new semi-rigid dirigibles are now being assembled at the yards of Dirigiblestroï. They will be known as the B-6 and the B-7. The volume of the first is 9,000 m³, and of the second 18,500 m³. The assembly of the B-6 is to be finished by Aviation Day, which takes place on August 18; the assembly of the B-7 will be finished by November next. The latter is the initial airship of the Lenin dirigible squadron and the first big semi-rigid dirigible to be used for regular flights on the first airship line to be opened in the U.S.S.R.

Grierson's Arctic Flight

Mr. John Grierson, who is attempting a flight from England to Canada via the Arctic air route in his "Fox Moth" seaplane, met with a mishap on Sunday when taking off from Reykjavik for Greenland. The seaplane was just about to leave the water when the port wing struck a boat, as a result of which the wing float and main spars were damaged.

American World Flight

A "Goodwill Flight" from America round the world via the southern route and Moscow is being carried out by about five American airmen, headed by Flight Commander W. H. Alexander, in a Sikorsky seaplane. They left Chicago on July 18, but when near Cleveland fire broke out in the carburetter of one of the engines, and a forced descent had to be made on Lake Erie. The fire was extinguished and only slight damage was done, delaying the flight for several days while repairs were carried out.



HIGH EFFICIENCY. Mr. Warren Eaton's Bowlus-du Pont sailplane. With wing flaps and a single landing wheel, this machine can be landed in very small fields at 21 m.p.h. It has a span of 62 ft., an aspect ratio of 18.8 to 1, a gliding angle of 30 to 1 at 34 m.p.h. and a sinking speed of 1.6 ft./sec.



SEEING FOR THEMSELVES: Last week members of the Parliamentary Air Committee paid a visit to the Filton Works of the Bristol Aeroplane Company, flying down in the Short "Syrinx" (shown arriving). On the left, Mr. Herbert Thomas, of the Bristol Company, is welcoming members of the party. (Flight Photos.)

Victor Smith's Progress

According to plan Mr. Victor Smith duly left Capetown in his Comper "Swift" on July 26, in an attempt to beat Mrs. Amy Mollison's record of 7½ days to England. He reached Mossamedes, Angola, the same evening, and next day flew 1,900 miles to Loanda.

Soviet Mission to Paris

A Soviet mission, comprising three four-engined bomber aircraft, is to visit Paris next week. Led by M. Unshlicht, Director of Civil Aviation, M. Khirpin, Chief of Staff, Red Air Force, and M. Khalamoff, director of the Zagi factory, the mission hopes to fly non-stop from Kieff to Paris.

And to Poland

A similar Soviet mission flew on Saturday from Kieff to Warsaw, where they were given a cordial reception. This visit is to return last year's visit to Moscow of the Polish Air Commander-in-Chief, Gen. Rayski.

Rocket Air Mail Mishap

An attempt to send a parcel of mails by means of the Zucker Rocket between the Island of Scapa and the mainland of Harris, Outer Hebrides, on Saturday failed owing to the premature explosion of the rocket. The letters—of which there were several thousand, including one addressed to H.M. the King—were recovered from the wreckage, and will be sent in another rocket on a second attempt.

Aeroplanes for Mongolia

In commemoration of the tenth birthday of the Republic (Soviet) of Outer Mongolia, the Russian Government sent a present of aeroplanes and motor buses to the local Government in Ulanbator.

Inverted Channel Flight

On Wednesday of last week, the twenty-fifth anniversary of Louis Blériot's cross-Channel flight, Flt. Lt. Geoffrey Tyson succeeded in flying upside-down from Dover to Calais in his D.H. "Tiger Moth."

High Highlanders

On Tuesday and Wednesday of last week tests were made at Aldershot in en-planing and de-planing troops. A platoon of Cameron Highlanders were packed into a Vickers "Valentia" on each day, and taken to altitudes of about 6,000 to 7,000 ft.

Italian "Air Exercises"

Italy, also, has been carrying out "Air Exercises." They were to test the efficiency of fast chaser aeroplanes against a sudden invasion by enemy bombers, and took place in the region of Northern Italy. A communiqué stated that the bombing squadron passed the imaginary frontier at the highest altitude possible and succeeded in entering national territory and bombing the target region, after which it was able to depart at great speed, being only partially handicapped by the light chasers.

French "Air Exercises"

In contrast to the Italian "air raids," where the bombing aircraft succeeded in getting through to their objectives, the French raids of Lyons last week are stated to have been completely repulsed by the defence organisation. About 75 per cent. of the "enemy" machines were, it was judged, "brought down" by anti-aircraft guns or aircraft.

U.S. Stratosphere Attempt

Maj. W. Kepner, Capt. A. Stevens, and Capt. O. Anderson had an exciting experience when the balloon *Daybreak*, in which they were making a flight into the stratosphere, developed a tear in the envelope at about 60,000 ft. At first it was hoped that a safe descent could be effected, thus saving the instruments and records of the ascent, but the balloon eventually commenced to fall with ever-increasing speed. At 5,000 ft. the envelope split completely open, and the three aeronauts had to jump with their parachutes. All three landed safely.

Aircraft Constructor Yachtsmen

Last week Mr. and Mrs. C. R. Fairey gave a dinner to Mr. and Mrs. Sopwith on the eve of their departure for America. Mr. Fairey said that the occasion was in the nature of a personal send-off with all the good wishes in the world from a few aeronautical friends. Among those present he mentioned in particular Baroness de Cartier de Marchienne, wife of the Belgian Ambassador and a relative of the man who took the Cup to America.

Diary of Forthcoming Events

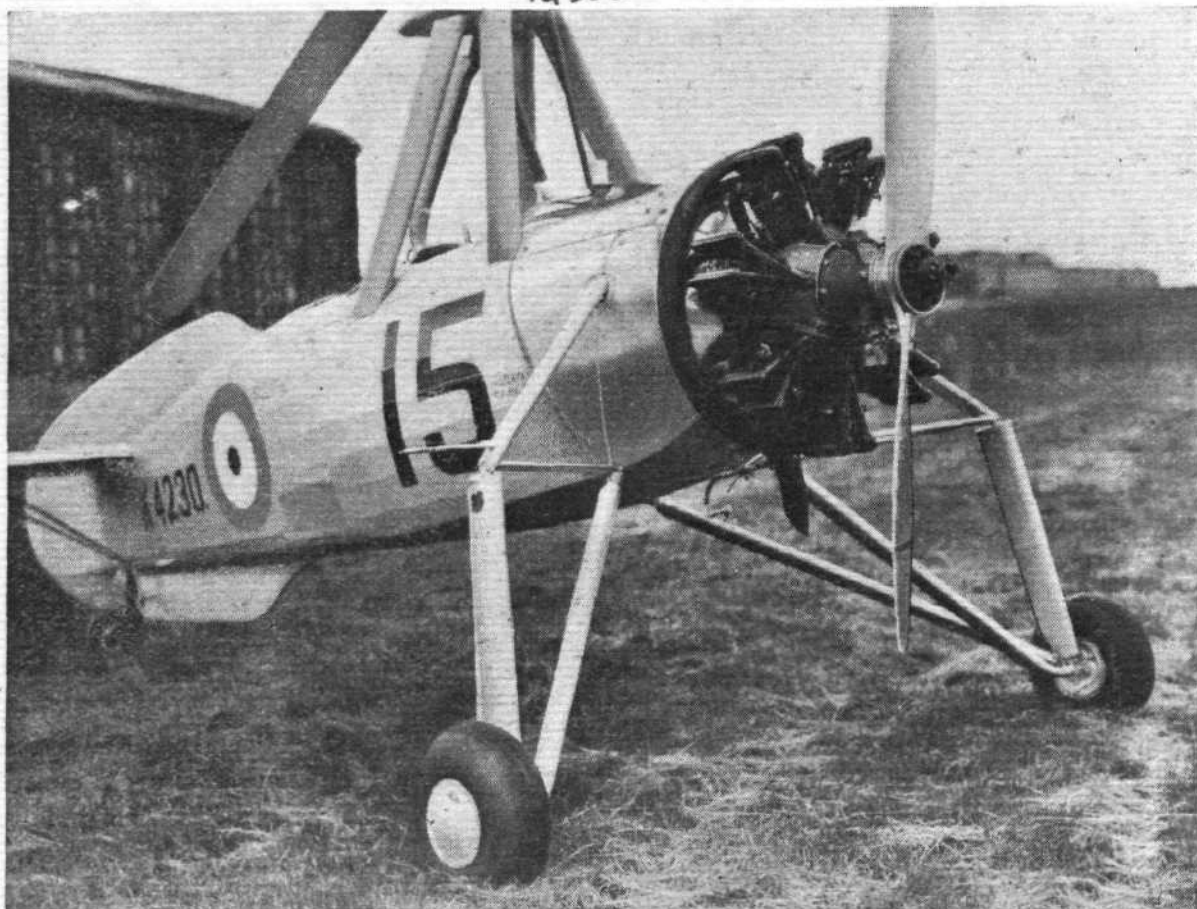
Club Secretaries and others are invited to send particulars of important fixtures for inclusion in this list:

Aug. 3. Air Service Training "At Home," Hamble.
 Aug. 11. London-Newcastle Race (Newcastle-on-Tyne Ae.C.).
 Aug. 15. Air Tour of Italy.
 Aug. 17-Sept. 6. Copenhagen Aero Show.
 Aug. 18. Cotswold Aero Club Air Rally and Garden Party.
 Aug. 25. Liverpool and District Ae.C. Garden Party, Speke Aerodrome.
 Aug. 28-Sept. 16. International Touring Competition, Poland.
 Sept. 1-2. Cinque Ports Flying Club International Rally, Lympne.

Sept. 1-9. National Soaring Competition, Sutton Bank.
 Sept. 8. Official Opening of Walsall Aerodrome.
 Sept. 29. Leicestershire Aero Club "At Home."
 Oct. 6. London to Cardiff Air Race and Cardiff Ae.C. Garden Party.
 Oct. 7. Aviation Golf Meeting, Royal Porthcawl Golf Club, Porthcawl.
 Oct. 20. England-Australia Race for MacRobertson Prize.
 Nov. 16-Dec. 2. 14th International Aviation Exhibition, Grand Palais des Champs-Élysées Paris.

ROTATING-WINGED FLIGHT

The Autogiro: Its Construction and Manufacture
14333



TO TAKE LANDING SHOCKS. Autogiros can land vertically, hence this wide under-carriage with compression legs having a long travel to take up the shock. The engine is a 140 h.p. 7-cyl. Siddeley "Genet Major." (*Flight* Photo.)

NOW that the C.30 type Autogiro has reached the production stage we are able to publish the first authoritative description of its construction. For many years the name of Señor de la Cierva and his "Autogiro" have been associated in people's minds with a form of flight which was not only radically different from accepted principles, but was also generally understood to be safer because the Autogiro was able to descend almost vertically.

Until recently, however, the flying machines produced by the Cierva Autogiro Company were rather in the nature of experimental developments of the principle and not, therefore, suitable for quantity production. With the advent of the C.30 type this policy is changed, and A. V. Roe & Co., Ltd., have laid down nearly a hundred machines in their Manchester workshops.

As was to be expected, features in conformity with their standard practice have been incorporated by A. V. Roe & Co. so that production could begin with a minimum of delay.

Like all Avro machines the fuselage is built up of welded steel tubes. The front and rear halves are made up separately, the division being at the bulkhead behind the rear, or pilot's cockpit. In both cases the sides of the fuselage are welded up on flat, table-like jigs, and subsequently the two sides are placed in their correct relation to one another in a vertical jig and the cross struts welded in. In the rear half the diagonal bracing between the two longerons in a horizontal plane is by the Avro method of forming a continuous loop of piano wire by passing it through small curved pieces of steel tube welded into each corner, and joining the ends with a wire strainer. The

diagonal bracing in the vertical plane is rigidly built up with tubes. The front half is entirely tube braced. Wherever possible, jigs are used both in order to ensure accuracy and to cheapen production. Consequently there are not only jigs for welding, but also for drilling, as, for example, at the four attachment points where the legs of the rotor pylon join the top longerons.

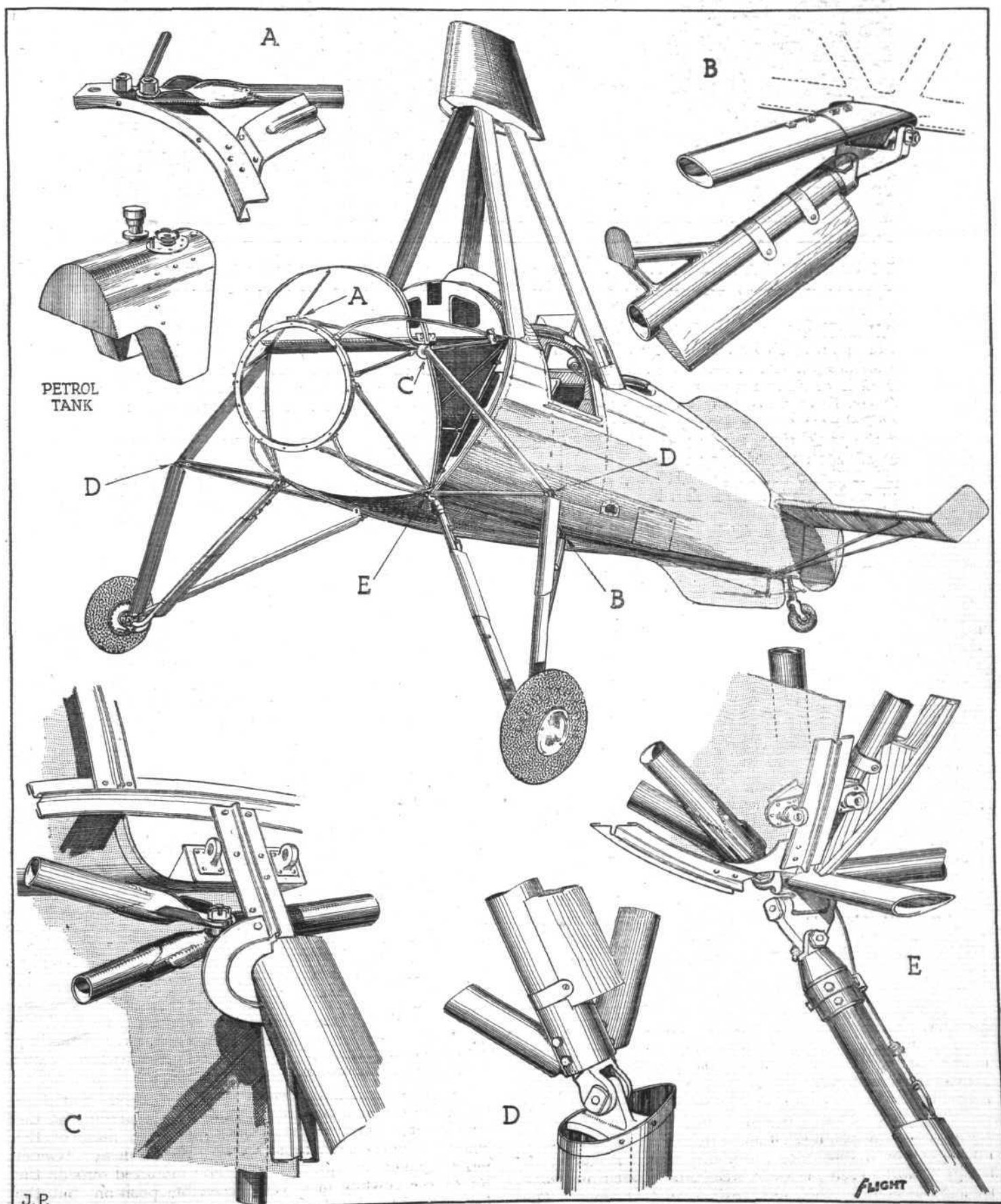
After the main part of the fuselage has been erected, the stern post and fins are welded on and the whole is stove-enamelled. The fins, although in reality continuous, may be considered as three in number. The fin on top of the fuselage; the tail fin, which, like the others, is fixed and occupies the same position as the rudder in a normal aeroplane; and the fin underneath the fuselage. All are built up of small-diameter steel tubes welded together.

The fuselage, from the front of the front cockpit to the tail, is encircled with plywood formers carrying numerous thin spruce stringers running fore and aft and forming a framework over which a doped fabric covering is secured. This fabric is only carried up to the top longerons in the front half of the fuselage, as the decking over the two cockpits is a separate structure of plywood. The engine bay, and the sides and top of the fuselage in the bay behind the fireproof bulkhead, are covered with detachable aluminium panels secured with Avro cowling clips.

The engine mounting consists of steel tubes bolted to fittings at the ends of the four longerons, carrying at the front a ring which registers with the back plate of the engine. The seven-cylinder Armstrong-Siddeley "Genet Major" engine of 140 h.p. is thereby mounted outside the line of the cowling in a very accessible position, but the drag is kept low by the smooth curve of the cowling behind

it. A collector ring with a single downward-facing outlet carries away the exhaust. Fuel is carried in a 23 gall. welded aluminium tank, strapped in position above the top longerons in the bay directly behind the fireproof bulkhead, which is of the normal sheet aluminium and asbestos construction. Mounted on the front of this bulkhead is the oil tank, of 3 gall. capacity, and also of welded aluminium. The throttle controls are the push-and-pull type with duralumin rods.

Wooden construction is used in the tail plane, which has spindled spruce spars, plywood ribs and spruce strut drag bracing, the whole being covered with doped fabric. This unit is interesting as the camber on the port side is reversed to counteract the engine torque reaction. At each end of the tailplane there are upturned tips of fairly large dimensions which serve to keep the Autogiro on a straight course and also to give it the necessary stability in turns. The trailing edges of these tips and those of the tailplane are



FUSELAGE DETAILS. The letters show the position of the enlarged details on the fuselage.



FOR "STAFF" TRANSPORT. The first of the Avro C.30a Autogiros ready for delivery to the Royal Air Force for Army co-operation work. Note the upper identification mark painted on the top of the fuselage. (Flight Photo.)

in the form of flaps which may be adjusted by means of a small screw for the purpose of trimming the machine.

A tail wheel is carried in a compression strut and fork designed by Mr. Dowty, of Aircraft Components, and has a 270 by 100 Palmer tyre. It is very neat and yet at the same time amply sprung for the heavy loads imposed upon it during typical Autogiro landings. It is steerable by cables from a cross foot-bar in the pilot's cockpit.

The two cockpits are well fitted with

the usual instruments, map cases and so on, and the sheet aluminium seats are dished to take Service type parachutes. A plywood floor extends the length of both cockpits and is bolted to small corner pieces of steel plate

DIRECT CONTROL AUTOGIRO TYPE C.30.

SIDDELEY "GENET MAJOR" (7 CYL.) ENGINE
DEVELOPING 140 H.P. AT 2,200 R.P.M.

DIMENSIONS

	ft.	in.	m
Diameter of rotor circle ...	37	0	(11.28)
Height overall ...	11	0½	(3.36)
Length overall ...	19	8½	(6.01)
Wheel track ...	9	0	(2.74)
Span of tail plane ...	10	2	(3.10)

AREAS

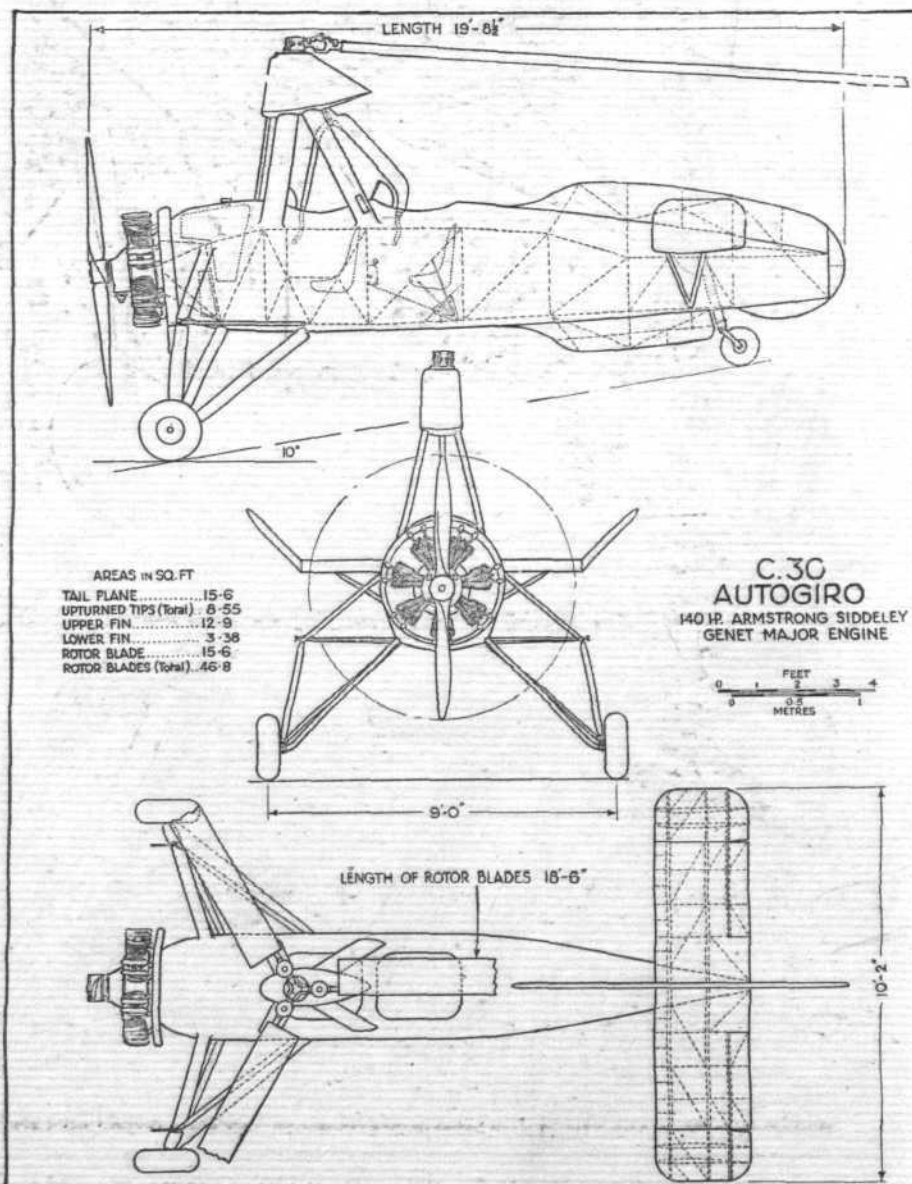
	sq. ft.	m²
Tail plane ...	15.6	(1.45)
Upturned tips (both) ...	8.55	(0.84)
Upper fin ...	12.9	(1.20)
Lower fin ...	3.38	(0.38)
Rotor blade (each) ...	15.6	(1.45)

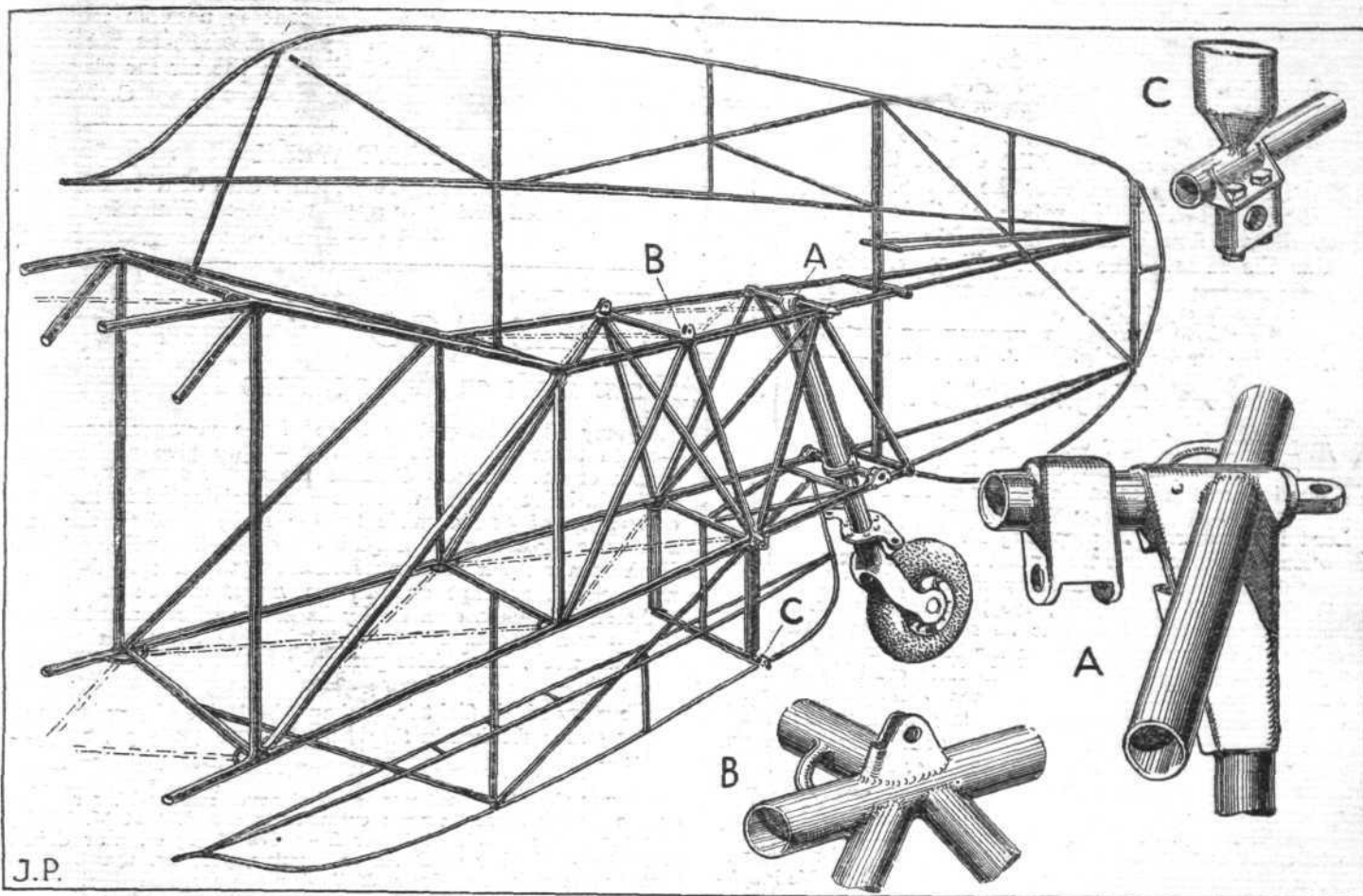
WEIGHTS

285 miles (458,66 km) range		lb.	kg
Tare weight ...	...	1,220	(553,38)
Crew (two) ...	...	330	(149,69)
Fuel, 23 gallons ...	...	177	(80,28)
Oil, 3½ gallons ...	...	32	(14,51)
Baggage ...	...	41	(18,60)
Gross weight (Max. permissible) ...	...	1,800	(816,46)

PERFORMANCE

	m.p.h.	km/h
Speed at sea level (Max.) ...	110	(177.03)
Cruising speed ...	95	(152.89)
Minimum flying speed about ...	15	(24.14)
Landing speed ...	Nil.	
Take-off run ...	12 yd. (10.97 m)	
Landing run ...	Nil.	
Rate of climb		
(initial) ...	700 ft./min. (3.56 m/sec)	
Ceiling ...	12,000 ft. (3 657.6 m)	





WELDED CONSTRUCTION. The rear of the fuselage with the tail-wheel mounting.

welded on to the fuselage between the cross bracing and the longerons. The front cockpit has a sliding door on the port side.

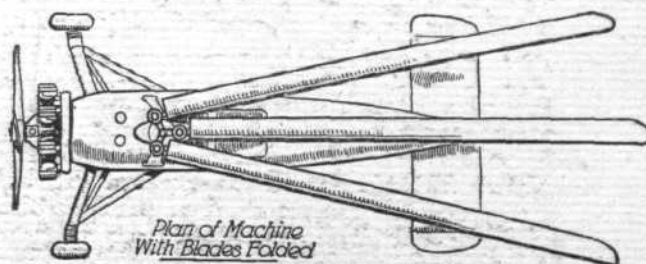
Wide outriggers of pyramid form, which carry the top ends of the Avro oil-and-spring undercarriage compression legs, appear rather massive, but it must be remembered that Autogiro landings impose greater stresses on this particular part of the structure than do the less vertical landings of the normal aeroplane. The upper pyramids are built of streamline-section steel tube, and the axle radius rods, as well as the compression legs, are faired to streamline shape with Balsa wood fairings; consequently, the drag should not be unduly high.

Now we come to what may be termed the "autogiratory" part of this flying machine. The rotor system consists of a three-bladed rotor revolving about a massive head mounted on a form of universal joint, so that it can be tilted in any direction by a control column. This control column is "hanging" as opposed to that in a normal aeroplane, where it is mounted on the floor of the cabin, but the effect is just the same, that is to say, pushing the column forward has the effect of pushing the machine down, and vice versa. A fore-and-aft bias is fitted which trims the Autogiro, much in the same way as the shock absorber cord loading device trims some light aircraft, but it does not have the disadvantage of giving an entirely false feel to the controls. A lateral bias is also arranged to overcome any tendency for the machine to wander from the straight path laterally and directionally.

At this stage it is probably as well to explain that the rotor is not driven by the engine, but once the machine is in the air it rotates of its own accord, hence its name Auto-giro. Before the machine can fly, however, it is necessary to start up the rotor, and for this purpose there is a shaft drive, operating through a clutch and gearing, from an extension on the back of the engine. Immediately the throttle is opened wide for taking off the rotor clutch is withdrawn, and from then on the rotor operates

entirely automatically. The blades have free movement through several degrees in the vertical plane, and a very much smaller movement in the plane of rotation. This latter movement is controlled by friction dampers. Motion in the vertical plane is necessary for aerodynamical reasons and allows the forward-travelling blade to rise and the rearward travelling blade to fall. This movement is also immediately apparent when an Autogiro at rest is compared with one in the air. When stationary it will be seen that the blades droop considerably, whereas in movement they assume a very definite "coning angle." Two of the blade hinges are arranged so that the corresponding blades may be folded back when a release pin is pulled out, and thus the Autogiro can, when necessary, be housed in a very narrow space. The blades themselves have a long steel tube spar, ply-faced spruce ribs and a 1 mm. plywood covering, the extreme tip being shaped from solid Balsa wood. The rotor head itself is a straightforward engineering job, running on ball bearings and incorporating a Bendix brake which allows the blades to be locked when not in use.

The reasons why the rotor autogyrates cannot be explained in a short article. Briefly, the blades are arranged aerodynamically so that the resultant of the lift and drag forces acts upon them in a slightly forward direction.



FOR A SMALL HANGAR. Two of the blades may be folded on their hinges to enable the machine to be housed in a small space.

The effect is to pull the blades round, and the centrifugal force keeps them extended. One of the great advantages of this system is that the speed of the blades through the air is, within limits, not dependent upon the speed of the whole machine through the air. There can, therefore, never be any sudden loss of lift due to the flying speed dropping too low, as whatever the rate of progress of the machine, the blades still rotate at their correct speed. Thus, the air flow over them is unchanged and the lift remains the same. The reader will appreciate from this

explanation why a vertical descent is possible with the Autogiro and not with the normal aircraft, as the latter is dependent upon its speed through the air for air speed over its lifting surfaces.

C. N. C.

NEXT WEEK

"Flying the Autogiro" is the title of a second illustrated article to appear in next Thursday's issue of *Flight*.

TWENTY-FIVE YEARS AGO

The first Flight across the Channel was made on July 25, 1909

M LOUIS BLÉRIOT was made an honorary life member of the Royal Aero Club last Wednesday, when a dinner was given in his honour at the Club to celebrate the first flight across the Channel.

Lord Londonderry, in proposing M. Blériot's health, drew attention to the fact that their guest had done them the signal honour of reserving the actual day of the 25th anniversary of his Channel crossing (July 25, 1909) for this dinner. Speaking of his recent visit to Buc he said he was particularly struck with the contrast between the R.A.F. machines which escorted him and the frail but historic craft upon which M. Blériot had made the first invasion of England from the air. He asked that everyone should look upon the aeroplane as a vehicle of peace for the promotion of friendly intercourse among peoples. He felt sure that wherever France and England could help each other in the progress of their air routes they would do so.

M. Blériot replied briefly in French, speaking of the cordiality with which he had been received in Great Britain, not only on this present occasion but also 25 years ago. He laughingly said that although aviation had progressed considerably since that time, his knowledge of English had remained stationary.

The French Ambassador made an eloquent speech in English voicing the thanks of M. Blériot. Lt.-Col. J. T. C. Moore-Brabazon, holder of pilot's licence No. 1 (M. Blériot is holder of the French No. 1 licence), thought that the name of Hubert Latham should be remembered that evening, as he only missed being the first man to fly the Channel by some 300 yards.

Among others present were:—

Commandant Papin (representing the French Air Minister), Mr. W. Lindsay Everard, M.P., Mr. C. R. Fairey, Mr. F. Handley Page, Sir Alliott Verdon-Roe, Lt.-Col. Mervyn O'Gorman, Lt.-Col. F. C. Shelmerdine (Director of Civil Aviation), Capt. A. G. Lamplugh, Maj. R. H. Mayo, Sq. Ldr. C. J. W. Darwin, Sir Francis McClean, Sir Lindsay Parkinson, Mr. H. J. Thomas (Chairman of the Society of British Aircraft Constructors), Mr. C. F. Fairey (President of the Royal Aeronautical Society), Sir Alan Cobham, Sir Walter Windham, Maj. H. P. Petre, Col. W. A. Bristow, Mr. R. Blackburn, Com. James Bird, and Mr. H. E. Perrin (Secretary, R.Ae.C.).

It may be of interest to those of the younger generation—or to those who have forgotten—if we give a few brief details of M. Blériot's Channel flight. In the first place it should be mentioned that the effort originated in the offer of a prize of £1,000 made by the *Daily Mail* to the first aviator to fly across the English Channel. Secondly, prior to M. Blériot's flight, Hubert Latham made a splendid, but unsuccessful, attempt on July 19, 1909, to win the prize, and seeing the chance offered by Latham's failure, and inspired by his own successful cross-country flight accomplished the previous week, M. Blériot promptly entered for the Channel Prize.

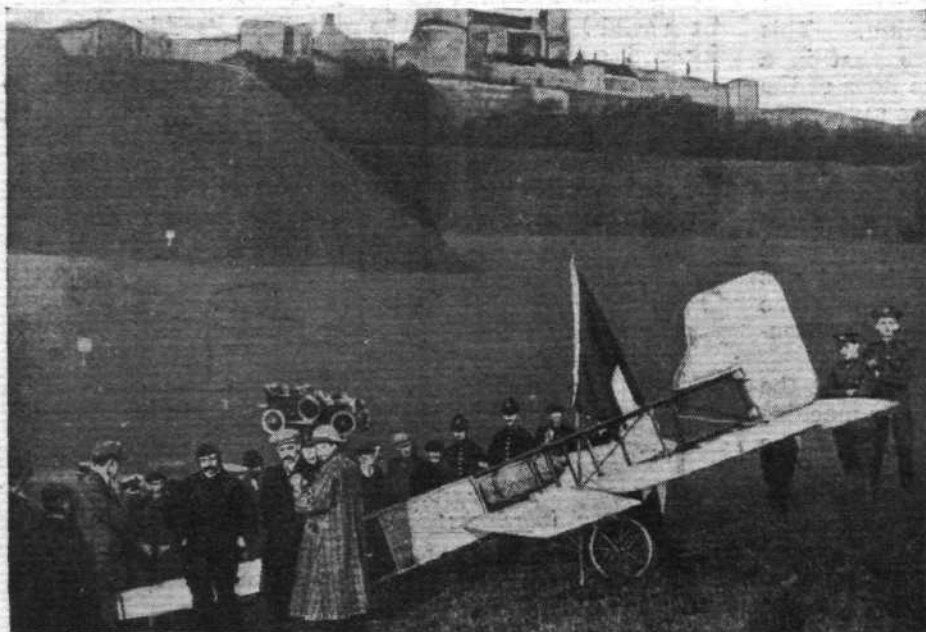
The story of his flight is, perhaps, best given by extracts of the account published in *Flight* at the time (July 31, 1909)—thus:—

"It was almost without warning, but nevertheless with a send-off on the French shore from an enthusiastic crowd, that M. Blériot flew across the Straits of Dover from Les Baraques, near Calais, to Northfall Meadow at Dover on Sunday, July 25, thereby incidentally winning the *Daily Mail* £1,000 prize. . . . Seeing that the fates were propitious he lost little time in bringing out the flyer, and in spite of his injured foot he quickly carried out a practice flight over the sand-hills between Les Baraques and Sangatte. A little earlier, too, he had notified his intention to start to the destroyer *Escopette*, which was consequently at that time standing out to sea, with Madame Blériot and others already aboard—all anxiously on the look-out for him. Finding everything working properly with his machine, he speedily effected a fresh start, this time flying straight away over the cliffs and heading towards England.

"That was at about twenty minutes to five (French time) and it was about twenty minutes past five (also French time) that he landed at Dover. Accounts differ as to the exact moment of departure and descent, and as a matter of fact it is doubtful if any reliable timing was made since M. Blériot started without a watch as well as without a compass. The distance of the flight was about 31 miles, and hence the speed was in the region of 45 miles an hour. During the crossing he flew at an altitude of 150 ft. to 300 ft. and thus kept much nearer the water than Mr. Latham did on his attempt.

"M. Blériot's monoplane quickly outstripped the torpedo-boat destroyer *Escopette*. . . . In mid-Channel M. Blériot lost sight of land and of his escort for a very uncomfortably long period—estimated by him to have been ten minutes—and was entirely without means of ascertaining his proper direction. In the circumstances he did the only thing possible, which was to keep straight on, and, fortune favouring him, he sighted the English shore off Deal while heading for St. Margaret's Bay. Turning along the coast M. Blériot flew towards Dover, and put in at a gap in the cliffs where a representative of *Le Matin*, M. Fontaine, was signalling to him with a tricolour flag. The site on which the landing was accomplished was the Northfall Meadow. Although the arrival was noticed from afar by several, and M. Fontaine was on the chosen part of the cliff at Dover, yet even he failed to see the real landing, and P. C. Stanford was the only eye-witness of this great historic event and landing on British soil of the first flyer to cross the Channel.

"The actual contact with terra-firma was rather abrupt; in fact, not only was the propeller broken, but that part of the framework which carries the engine was also damaged."



ACROSS! M. Blériot's historic landing in Northfall Meadow, Dover, on July 25, 1909. Reproduced from *Flight* of July 31, 1909.

PRIVATE FLYING

A SECTION FOR OWNER-PILOTS
AND CLUB MEMBERS

THE Report of the Gorell Committee (see pages 776-8 of *Flight*, July 26) should be read by all present and would-be private owners. Apart from the detailed recommendations there emerges, from the conclusions arrived at, an obvious desire to bring about conditions which should react to the advantage and welfare of private flying. The personnel of the Committee comprised an excellent selection of experienced men, but, in view of the fact that the scope of its activities was confined to civil aviation, it was perhaps a little unfair to themselves that certain members, whose normal interests in aviation are on the Service side, should have been included.

The Committee has been subjected to a certain amount of criticism in that their recommendations went beyond the terms of reference remitted to them. It must be remembered, however, that if they interpreted their authority liberally, they laboured under the difficulty of having their original instructions supplemented on several occasions. This naturally added to the complexity of their work, and if, in the circumstances, they themselves added an opinion on what the majority felt was a fundamental requirement, it was obviously only put forward in the best interests of civil aviation and in order that the main issue should not be overclouded by the consideration of details. The Reservation to the Report, made by two members of the Committee, only amplified this viewpoint; it remained, therefore, for these two, who, of those appointed, have been the most intimately connected with private flying from the very earliest days, to focus attention on the conditions under which civil aviation generally might be expected best to flourish. Their opinion is not only justified by the precedent which governs the maritime system but is a logical sequence to the expressed policy of the Air Ministry, emphasised by the Secretary of State, that the Department have for some time introduced an increasing measure of de-control.

The main purpose of the Committee's deliberations being the improvement of conditions governing private flying, it is gratifying to find such a marked unanimity on this point not only amongst the members themselves but on the part of the Air Ministry in regard to the steps which shall be taken. The recommendations affecting this branch have in the main been agreed to by the Air Minister, who will, presumably, lose no time in putting them into effect. So far as the control of private flying is concerned the decisions arrived at will no doubt give general satisfaction. The design and construction of private aircraft will undoubtedly be simplified by the putting into operation of Recommendations (iv), (v), (vi) and (xi), which may be expected to inaugurate an era of cheaper machines, as well as to help the earlier development of "unconventional" types, but which may have a great influence on the future of air development.

The suggestion that such supervision of design, construction and maintenance of civil aircraft as may be necessary in the future should become the prerogative of a body to be designated the Air Registration Board will be generally

approved. Although the Air Ministry does not see its way clear, for the time being, to extend this prerogative to the larger types of civil aircraft used for commercial air transport, private flying, at least, will benefit by the common agreement that aircraft construction falling within this latter category should be relieved from all official control.

Airworthiness of Private Machines

WITH regard to this question of airworthiness, the private owner will welcome the prospect of freedom from the present requirements. There may be a consensus of opinion in favour of the proposal that a certificate of airworthiness should continue to be required for aircraft engaged in regular air transport, air-taxi, joy-riding and training work, but it is hoped that under the new arrangement such regulations as may still be considered necessary will be modified and reviewed at frequent intervals. The concession in regard to private aircraft is phrased as an option to take out a certificate of airworthiness or not, and in this connection it must of course be remembered that the second-hand value of aircraft has been

kept at a comparatively high level as a consequence of the careful maintenance and thorough overhaul necessitated before the annual certificate of renewal was issued. It may be that the possession of a certificate of airworthiness will be still worth while from this point of view, for the depreciation of aircraft under the old system was not so much a question of deterioration of the aircraft itself as of obsolescence. Manufacturers also may exercise the option of applying for an airworthiness certificate for machines intended for private use—as a selling feature.

Other recommendations of particular interest to the owner pilot are summarised in (xii) and (xiii). General agreement seems to have been arrived at in regard to the carrying of non-fare-paying passengers in the future by holders of a private pilot's "A" licence, and this arrangement will continue to remain in force. The simplification of requirements in regard to the carrying of documents by the owner pilot will also be welcomed.

The Recommendation under (xv), which deals with compulsory third party insurance, will not cause any considerable misgiving, as there must be few private owners who have not voluntarily covered themselves in this respect. The stipulation is, however, undoubtedly warranted, as with the prospect of progressively cheaper aircraft becoming available there might, under the present conditions, have developed a tendency to neglect this precaution.

Those who remember the many distressing circumstances which so often arose before motorists were compelled to take out a third party insurance will see no reason why owners of aircraft should remain immune from this requirement. The need for satisfying the insurance companies before a policy is issued will, in itself, form a safeguard against faulty manufacture and neglect of maintenance in the case of machines which no longer require an airworthiness certificate.

NOTES

by

LORD SEMPILL

A.F.C., F.R.Ae.S.

Private Flying

FROM THE CLUBS

Events and Activity at the Clubs and Schools

BRISTOL AND WESSEX

Owing to the generosity of a member, who wishes to remain anonymous, the club has been able to place an order for a C.30 Autogiro, which should be delivered early in September by Henlys, Ltd.

CAMBRIDGE

The aerodrome at Fen Ditton was used nightly as an emergency landing ground during the recent exercises. An emergency call was recently received from Mrs. Victor Galpin, of Newmarket. She was picked up at Newmarket and conveyed to Windsor within the hour.

HATFIELD

It has been very gusty during the past few days, and this has held up those members of the London Aeroplane Club who have reached the landing stage of their tuition. However, several long cross-country flights were carried out. Last Saturday Mr. Harris, the chief instructor, took Mr. Hicks for a tour round the east coast in his "Leopard Moth."

Both the R.A.F. Flying Club machines are now off service, but the club has been able to arrange with F/O. Ogilvie, one of the members, for the loan of his "Moth."

READING

Eight machines from the club and school made a "Dawn Patrol" attack on Brooklands aerodrome on Sunday, and all, except one unfortunate, got through the defences unobserved. The Reading bathing party was rather spoiled by bad weather in the provinces, which prevented a party of six coming from Northampton. Nevertheless, two brave souls, Mr. and Mrs. Knight, flew in their "Bluebird," in bathing dress only, all the way from Hereford, thereby earning a free lunch. A treasure hunt was, however, organised, an event which included the swimming of the river Loddon.

NORFOLK AND NORWICH

The club will be open as usual during the August holidays, but will be closed for flying on the following Tuesday and Wednesday.

SOUTHERN

A landing competition was held on July 22, in which engines had to be throttled back at 1,000 ft. and the tail skid placed as near as possible to a white square. The winner was Mrs. Barnes in her Miles "Hawk," and the runner-up Mr. G. H. Miles in the same machine.

SOUTHEND

The club's first "At Home," on July 22, was a great success, and visitors turned up from as far as Barnstaple and Castle Bromwich. Among the many flying events were a members' race, over a 13½-mile course, won by Mr. A. W. Pearce, a display of aerobatics by Mr. W. Glover, the instructor, an aerobatic contest, won by Mr. Garland, and a visitors' race, won by Mr. M. Wood. There were, too, the usual demonstrations, and all the "shows" of a garden party.

BROOKLANDS

The total flying time of the associated clubs, Brooklands, Northampton and Lympne, during the past week has been 125 hr. dual and 71 hr. solo. Four members at Brooklands completed their "A" licence tests, including Mr. Harvey, who went solo for the first time one morning and completed his three hours, including a height test, before 9 o'clock on the same day.

Every morning for the last month machines have been flying at 7.30 a.m., and the Chief Instructor, Capt. Mackenzie, is to be congratulated on the enthusiasm he has instilled into pupils.

Well-known Trinidad Pilot Killed

It is with regret that we report the death, in a flying accident, of Mr. Michael Cipriani, Trinidad's pioneer amateur pilot and sportsman. Mr. Leslie Bradshaw, who was his passenger on an attempted flight from Port of Spain to Tobago, was also killed instantly. It appeared that Mr. Cipriani's machine, a "D.H. Moth" (*Humming Bird*), struck a tree on the side of a deep gorge while the pilot was flying more or less "blind." More than 20,000 people attended the double funeral.

Mr. Cipriani, who was a solicitor by profession, had been a pioneer owner-pilot in Trinidad, and his loss will be keenly felt.

Entries for the London-Newcastle Race

Although the closing date for entries had been extended until to-day, and late entries may be received until Monday next, below are those received for the London-Newcastle race at the time of going to press:—

Reg.	Machine.	Engine.	Pilot.	Entrant.
G-ACCW	Miles Hawk Gipsy Moth	Gipsy Major Gipsy Major	C. O. Powis Fit/Lt. Selby-Lowndes	C. O. Powis C. A. MacDonald
G-ACLI	Miles Hawk	Gipsy III	S. B. Cliff	S. B. Cliff
G-AAVT	Hendy 302	Hermes IV	C. S. Napier	C. S. Napier
G-ACKN	Leopard Moth	Gipsy Major	S. W. Sparkes	W. R. Porter
G-ABVW	Gipsy Moth	Gipsy III	L. Lipton	L. Lipton
G-ABOD	Hawker Tomtit	Wolseley A.R.9	G. E. Lowdell	Lord Nuffield
G-ABPK	Gipsy Moth	Gipsy I	C. H. Tutt	C. H. Tutt
G-AAZE	Gipsy Moth	Gipsy II	Miss E. M. Jackaman	Miss E. M. Jackaman
G-AGGR	Percival Gull	Napier Javelin	Sir John Kirwan	Sir John Kirwan
G-AAIG	Hendy Hobo	Pobjoy	A. L. T. Naish	Major Moller
G-ABDI	Puss Moth	Gipsy III	J. V. K. Watson	Germ Lubricants, Ltd.
G-ABLG	Puss Moth	Gipsy III	W. L. Runciman	W. L. Runciman
G-ABUU	Comper Swift	Pobjoy	Miss C. R. Leathart	Miss C. R. Leathart
G-ACTE	Miles Hawk	Gipsy VI	Sir C. H. Rose	Sir C. H. Rose
G-ABME	Avian	Genet Major	S. Cotton	Miss J. M. Cotton
—	—	—	—	E. J. Jobling-Purser

By Air to the Alpine Trial

For the benefit of those keen motorists who wish to witness the finish of the International Alpine Trial at Munich, Autocheques, Ltd., are arranging to provide a special aeroplane. The charge of £18 18s. for the trip will include hotel accommodation and an allowance of 15 lb. of baggage for each person. The machine will leave Heston on Sunday, August 12, at 8 a.m., and will return to Heston at about 8 p.m. on the following day, a car being, of course, provided at each end.

A Yachtsman's Landing Ground

It has often been remarked that the pilot and the sailing man have a great deal in common, and that the judgment needed for successful work in either sphere is of a similar order. Certainly, the work of bringing a yacht up to a mooring while under sail, in a strong tide, is similar in every respect to that of bringing an aircraft into a "spot" landing—even to and including the accurate three-point! The appearance of a landing ground for yachting pilots is, therefore, of particular interest.

Last Saturday Her Grace the Duchess of Bedford flew over from Woburn in her "Gipsy Moth," piloted by Flt. Lt. R. L. Preston, and officially opened the new landing ground provided by the Royal Corinthian Yacht Club at Burnham-on-Crouch. Conditions were fairly difficult from a flying point of view, with an extremely strong wind, so there were, at the opening time, no other flying visitors, and even the escorting machine went away again for the time being without touching down. Her Grace was met by the Commodore of the club, Mr. E. S. Mitchell, and the party afterwards went to lunch at the club house. In the afternoon there was the usual racing. It is interesting to remember that Mr. Sopwith's amateur crew for *Endeavour* was provided by the R.C.Y.C.

The new landing ground is within a mile of Burnham itself, and lies to the east, with the sea-wall forming the southern boundary. It is between three and four hundred yards square, with moderately good approaches, and its position is marked by the local gasometer, which stands just behind the western boundary. The hedges have been cut well down for the prevailing wind, and, with care, little difficulty would be experienced by the light aeroplane pilot.

Private Flying

WEEK-END RACING

ON Saturday last the race for the Society of British Aircraft Constructors' Challenge Trophy was flown at Bristol in a tempestuous wind. Not only those taking part but also those who arrived at the Airport to witness the race were heard to complain of the buffeting they had received. The race was a good one from the spectators' point of view, although the pilots in it evidently found the bumpy weather rather too much of a good thing. Racing always brings out the worst and the best in pilots, particularly a race over a short course with frequent corners. In this there were one or two pilots who evidently haven't learnt that the faster a machine is flying the less does it pay to make spectacular steeply banked turns which necessitate the use of lots of control surface and pull down the speed considerably. Sir Charles Rose, in the fastest machine in the race, the "Hawk M2" ("Gipsy Six"), showed that he had learnt this lesson, and his cornering was superb. He gained on every corner and handled his machine perfectly. Mr. Hall, on the winning Avro "Cadet" (Genet Major seven-cylinder), had apparently found several more m.p.h. than this type usually has, so he rather romped away from the handicappers. There were two races at Sherburn, the first for the Yorkshire Trophy, which drew eleven starters, the winner being Mr. Micklethwait, a popular local owner, who averaged 104½ m.p.h. The other race, the Sherburn Short Handicap, was run in three heats, producing some quite exciting racing, particularly in the third heat, when Mr. Gardner beat Mr. Sparkes by a "prop boss." In the final Mr. Gardner flew his "Cadet" (Genet Major) into first place at 113 m.p.h., and Mr. A. Henshaw was second in his "Leopard Moth" (Gipsy Major) at 128 m.p.h.



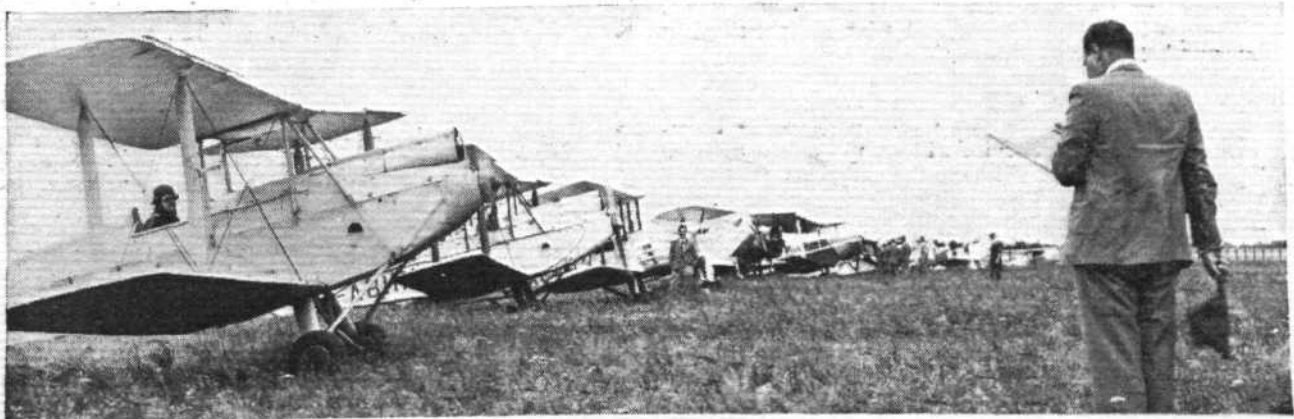
Mr. H. J. Thomas, chairman of the S.B.A.C., presenting the Society's Trophy to Mr. R. F. Hall, of the Lancashire Aero Club. Behind them is Sir Charles Rose, who came in second.

THE S.B.A.C. RACE

Entrant	Pilot	Machine and Engine	Registration	Start	Finish	Av. Speed	Placing
				min. sec.	min. sec.	m.p.h.	
London Ae. C. ..	Flt.-Lt. W. Johnson	"Moth" ("Gipsy II") ..	G-AASL	0 00	27 25	97½	9
Leicestershire Ae. C. ..	D. Longmore ..	"Moth" ("Gipsy II") ..	G-ABTF	0 15	26 07	103	5
Bristol & Wessex Ae. C. ..	Hon. H. Bathurst	"Moth Major" ("Gipsy Major")	G-ACPT	0 59	26 32	104½	7
Miss E. Tyzack ..	Entrant ..	"Cadet" ("Genet Major") ..	G-ACHW	1 06	27 03	102½	8
Lancashire Ae. C. ..	R. Hall ..	"Cadet" ("Genet Major") ..	G-ACMG	2 00	25 02	116	First
L. Lipton ..	Entrant ..	"Moth" ("Gipsy III") ..	G-ABVW	3 37	25 59	119½	4
A. Henshaw ..	Entrant ..	"Leopard Moth" ("Gipsy Major")	G-ACLO	5 49	25 57	132½	3
C. Powis ..	Entrant ..	"Hawk" ("Gipsy Major") ..	G-ACVM	7 15	30 37	114½	10
A. Cook ..	Entrant ..	"Swift" ("Gipsy Major") ..	G-ABWW	8 29	26 17	150	6
Sir Charles Rose ..	Entrant ..	"Hawk" ("Gipsy Six") ..	G-ACTE	9 40	25 52	164½	2

YORKSHIRE TROPHY RACE

Entrant	Pilot	Registration	Machine and Engine	Start	Finish (Time of day)	Av. Speed	Place
				min. sec.	hr. min. sec.	m.p.h.	
C. Tutt ..	Entrant ..	BPK	Moth (Gipsy I) ..	00 00	15 29 52	99½	10
J. Micklethwait ..	Entrant ..	BHN	Moth (Gipsy II) ..	00 32	15 24 40	104½	First
Capt. N. Blackburn	C. Napier ..	CAH	B.2 (Hermes IV A) ..	10 09	15 26 31	112½	4
A. Patterson ..	Mrs. Patterson	CIZ	Hawk (Cirrus III) ..	12 18	Retired	(magneto trouble)	
C. Gardner ..	Entrant ..	BYC	Cadet (Genet Major) ..	13 58	15 26 32	117	5
L. Lipton ..	Entrant ..	BVW	Moth (Gipsy III) ..	18 36	15 26 04	123½	2
Germ Lubricants, Ltd.	J. Watson ..	BDI	Puss Moth (Gipsy III) ..	19 20	15 28 51	121	9
E. Hicks ..	V. Parker ..	CPK	Leopard Moth (Gipsy Major)	27 17	15 28 10	133	7
W. Porter ..	S. Sparkes ..	CKN	Leopard Moth (Gipsy Major)	27 17	15 28 01	133	6
Capt. J. Shaw ..	Entrant ..	CTD	Hawk (Gipsy III) ..	31 52	15 28 26	140	8
A. Cook ..	Entrant ..	BWW	Swift (Gipsy Major) ..	39 39	15 26 14	159½	3



Capt. W. Dancy starting the Heston-Sherburn race last Sunday. (Flight Photo.)

THE ROYAL AIR FORCE



Service Notes and News

Air Ministry Announcements

EXPANSION OF R.A.F. PILOT RESERVE

The Air Ministry announces:—

As the Secretary of State for Air stated on Monday, July 23, in the House of Lords, steps will require to be taken during the period of expansion of the Royal Air Force to obtain the necessary officer and airmen personnel to man the new squadrons, and concurrently to increase the number of pilots in the R.A.F. Reserve. The steps to be taken as regards the Reserve are as follows:—

In addition to pilots transferred from the active list on completion of their time as short service officers or airmen pilots, the R.A.F. pilot reserve consists at present of officers commissioned directly in the Reserve from civil life and taught to fly at the Reserve Civil Flying Schools at Bristol, Brough (East Yorks), Hamble (Hants), and Hatfield (Herts).

AIRMAN PILOTS

A decision has now been taken to place the system of direct entry to the Reserve from civil life on a new and broader basis. Such entrants will in future be accepted for service in the first instance as *airman pilots*. After three years, during which they will do about a hundred hours' flying and will be eligible to obtain a "certificate of proficiency" in their service duties, they will be considered for the grant of commissions in the Reserve. Selection for commissions will be made on a strictly competitive basis, and those pilots who have shown the greatest keenness and ability will be chosen. The only candidates who will be eligible for appointment direct to commissions in the Reserve will be University men who have already served in one of the University Squadrons which are maintained at Oxford and Cambridge, and have there obtained their flying experience and their certificate of proficiency.

Entry as airman pilot will be open to young men between 18 and 25 years of age who have had a good education either at a public or secondary school. Forty appointments will be made at the first intake, and further openings will be announced as requirements necessitate. Those selected will commence their training at various dates in September at one of the Reserve Flying Schools. The arrangements made there for their messing, accommodation and instruction, will be the same as those already in force for officer entrants into the Reserve. The initial course will consist of a fortnight's instruction on the ground, followed by 50 hours flying which, while dependent on the weather, does not normally occupy more than seven weeks. Those who cannot take the full course continuously may be allowed to break it at the end of the fortnight's ground instruction or after one month of flying instruction.

It is confidently believed that the opportunity to learn to fly as a pilot and to take their place in the air defence of the country will appeal to young men, and that competition for the limited number of appointments will result in a high standard in personality, ability and education being set for acceptance. As stated above, those who are accepted will have a further opportunity at a later date to compete among themselves for commissions. The Service will gain in efficiency from the incentive thus given, and will have the assurance that those chosen for its Reserve officers will be men who have proved in practice their energy and capacity as pilots.

CIVILIAN PILOTS WANTED.

In addition to the forty appointments announced above for young men who have not yet learned to fly, applications for entry as airman pilot are invited from civil pilots up to the age of 28 who have not less than 25 hours' flying experience and can pass a qualifying test as a pilot. Accepted candidates of this class will not be given the course of initial training and will be required to perform only the normal annual flying

training of a Reserve pilot. This consists of a minimum of 20 hours flying, and the period of training, which should, if possible, be a continuous one, does not normally exceed 20 days.

The pay and allowances of airman pilots during training amount to 10s. 6d. a day until qualified as a pilot, and thereafter to 17s. 6d. a day. When so qualified they also receive reserve pay and flying reserve pay amounting to £23 10s a year.

TRAINING OF A.A.F. SQUADRONS AS FIGHTER SQUADRONS

Nos. 600, 601 and 604 (Bomber) Squadrons are to be, or have been, converted to fighter squadrons on the following dates:—No. 604 (County of Middlesex) (Bomber) Squadron—July 23, 1934. No. 600 (City of London) (Bomber) Squadron—August 12, 1934. No. 601 (County of London) (Bomber) Squadron—August 12, 1934. The rearming of these squadrons with "Demon" aircraft will commence on dates to be notified later. As the necessary "Demon" aircraft will not be available on the dates mentioned above, the squadrons are to commence training as fighter squadrons with their existing aircraft.

R.A.F. VISIT TO PORTSMOUTH

Four squadrons of the Royal Air Force—Nos. 1 and 43 (Fighter) Squadrons from Tangmere (both flying "Furies"), and Nos. 7 and 58 (Bomber) Squadrons from Worthy Down (both with "Virginias")—visited Portsmouth Municipal Airport on July 19. Sir Harold Pink, Lord Mayor of Portsmouth, accompanied by the Lady Mayoress and members of the Corporation, welcomed the squadrons on their arrival, and entertained the officers and men at luncheon at the Guildhall. The visit attracted large numbers of the public to the aerodrome, and during the afternoon the squadrons gave a flying display.

SHORT SERVICE OFFICERS

Short service officers are reminded of the importance of preparing in good time for return to civil life. Suggestions relating to educational preparation are contained in a memorandum which was issued to all commands in May, 1934. Copies of this document can be obtained at any time by application to station educational officers and will be issued by the latter without special application to all short service officers on posting from their flying training schools.

An important section of the memorandum deals with civil aviation. Certain commercial firms require candidates for posts as pilots to possess not only a "B" Licence but other licences such as the 2nd Class Navigator's Licence, the Postmaster-General's W/T Air Operator's Licence and the "A" and "C" Ground Engineers' Licences. Short service officers who contemplate seeking employment in civil aviation are therefore strongly advised to obtain these licences before they leave the service. Full particulars relating to the licences are contained in the memorandum.

FOREIGN OFFICERS IN THE R.A.F.

Major Januskevicius, of the Lithuanian Air Force and Lieutenant G. H. Wendelbo, of the Norwegian Naval Air Service, will be attached to the Central Flying School, Wittering, as from July 23, 1934, in order to undergo the Flying Instructors' Course.

R.A.F. SWIMMING ASSOCIATION

The R.A.F. championships will be held at the Halton Command swimming bath on the following dates:—Heats, August 17 to 20; Finals, August 21.

OBSERVER CORPS

The Observer Corps has recently received a new Assistant Commandant, Air Commodore A. D. Warrington-Morris, C.M.G., O.B.E., who was formerly head of the Signals Branch, Air Ministry, and retired last year. Both he and the Commandant, Air Commodore E. A. D. Masterman, C.B., C.M.G., C.B.E., A.F.C., were advanced torpedo specialists in the Navy before the war. The headquarters of the Corps are at Uxbridge, in close proximity to those of the Air Defence of Great Britain command and also the Fighting Area.

The controllers of the five groups into which the Corps is at present organised are: No. 1, Mr. J. H. Day, M.B.E.; No. 2,

Mr. H. T. Knott, M.B.E.; No. 3, Colonel G. N. Salmond, C.M.G., D.S.O.; No. 17, Mr. G. R. Bolton; and No. 18, Lieutenant-Colonel H. W. Herring, M.C.

THE ROYAL AIR FORCE BENEVOLENT FUND

The usual meeting of the Grants Committee of the Fund was held at Idlesleigh House, on July 25. Air Com. B. C. H. Drew, C.M.G., C.B.E., was in the chair, and the other member of the committee present was Mrs. L. M. K. Pratt Barlow, O.B.E. The committee considered in all a number of cases, and made grants to the amount of £378 15s. The next meeting was fixed for Wednesday, August 8, 1934, at the offices of the Fund at 2.30 p.m.

ROYAL AIR FORCE GAZETTE

General Duties Branch

Sqd. Ldr. W. F. Dickson, D.S.O., O.B.E., A.F.C., is placed on the half-pay list, scale A, from July 21 to 29 inclusive; F/O. R. D. Williams is transferred to the Stores Branch on probation (July 19); Flt. Lt. G. V. Carey (Lt., Devon Regiment, R.A.R.O.) is transferred to the Reserve, class A (July 19); F/O. B. J. McGinn is transferred to the Reserve, class A (July 14); Flt. Lt. A. J. Long resigns his permanent commission (July 14); P/O. F. W. Richards relinquishes his short service commission on account of ill-health (July 25).

Medical Branch

Sqd. Ldr. A. J. O. Wigmore, M.B., Ch.B., M.R.C.S., L.R.C.P., is placed on the retired list on account of ill-health (July 20).

ROYAL AIR FORCE RESERVE

Reserve of Air Force Officers

General Duties Branch

G. F. Hall is granted a commission as Pilot Officer on probation in class AA (i) (July 4).

The follg. are granted commissions as Pilot Officers on probation in class AA (ii) (July 9):—H. F. Bromwich, G. T. W. Champneys, H. N. Edge, P. E. Hadow, R. W. Hase, T. H. Hazlerigg, C. F.

ROYAL AIR FORCE INTELLIGENCE

Appointments.—The following appointments in the Royal Air Force are notified:—

General Duties Branch

Wing Commander.—A. R. Arnold, D.S.C., D.F.C., to No. 1 School of Technical Training (Apprentices), Halton, 18.7.34. For Administrative duties with No. 2 Apprentices Wing vice W/Cdr. C. N. Lowe, M.C., D.F.C.

Squadron Leader.—B. Ankers, D.C.M., to School of Photography, South Farnborough, 20.7.34. For Photographic duties vice S/Ldr. C. Porri.

Flight Lieutenants.—F. G. A. Robinson, D.F.C., to No. 15 (B) Squadron, Abingdon, 20.7.34. J. E. Allen, to R.A.F. Base, Calshot, 16.6.34. H. P. G. Leigh, to No. 1 Stores Depot, Kidbrooke, 19.7.34.

Flying Officers.—A. M. Watts-Read, to No. 4 (A.C.) Squadron, South Farnborough, 20.7.34. J. Heber Percy, to Special Duty List, 19.7.34. On exchange with South African Air Force Officer.

Stores Branch

Flight Lieutenants.—J. R. Brown, to Headquarters, Inland Area, Stanmore, 20.7.34. M. S. Shapcott, to Station Headquarters, Boscombe Down, 20.7.34.

Flying Officers.—The following Flying Officers are posted to School of Store Accounting and Storekeeping, Cranwell, on 20.7.34 on appointment to Permanent Commissions:—H. E. Bethell, E. J. Bradbury, W. G. R. Jarman, T. J. Kinna, and H. Wood, M.B.E.

EXAMINATIONS FOR CIVIL AIR NAVIGATORS' LICENCES

The Air Ministry announces that the following candidates, whose names are given in alphabetical order, have passed the examination for civil air navigators' licences held during the week beginning March 19, 1934:—

FIRST CLASS.—London Centre.—Bennett, D. C. T.; McMillan, A. R.
SECOND CLASS.—London Centre.—Allen, F. C.; Dudding, M. C.; Mack, G. R.; Phillips, C. W.; Poole, E.; Scott, W. J.; Williams, L. M. K.; Worger-Slade, A. N. I. Calshot.—Brown, R. B.; Russell, H. M.; Sampson, G. E. Cairo.—Chapman, J. H.; Clarke, C.; Downing, E. T.; Harrington, J. C. Singapore.—Alderson, M. R.; Burslem, B. L. India.—Garside, F. R.

An examination for Second Class Air Navigators' Licences will be held on Monday, Tuesday and Wednesday, the 15th, 16th and 17th October, 1934, at the following centres: (a) London (at a centre to be announced later). (b) Heliopolis (the office of the British Civil Aviation Directorate Representative in Egypt, Heliopolis Aerodrome). (c) Baghdad (Hinaidi Aerodrome). (d) Singapore (Seletor Aerodrome). (e) India (Karachi Aerodrome).

Application forms, syllabi and the conditions of the examination may be obtained on application in writing to: (i) the Secretary, Air Ministry (C.A.2.), Adastral House, Kingsway, London, W.C.2. (ii) The British Civil Aviation Directorate Representative in Egypt, Heliopolis Aerodrome, Heliopolis, Egypt. (iii) The Air Officer Commanding, Iraq Command, Air Headquarters, Hinaidi, Iraq. (iv) The Officer Commanding, R.A.F. Headquarters, Far East Command, Singapore, Straits Settlements, and The Director of Civil Aviation in India, Department of Industries and Labour, Simla, India. Formal application for permission to attend these examinations must be made on form C.A.2.c, and, together with the prescribed fees, must have been received at the appropriate address not later than Monday, 10th September, 1934. In no circumstances can late applications be considered. Applications to sit for the examination should be lodged with:—

- For the London centre: The Secretary, Air Ministry (C.A.2.), Adastral House, Kingsway, W.C.2.
- For the Heliopolis centre: The British Civil Aviation Directorate Representative in Egypt, Heliopolis Aerodrome, Heliopolis, Egypt.

Kendall, G. K. Lawrence, C. L. Milligan, N. B. Mole, D. G. Perry, J. L. Rogers, J. B. Seager, J. H. Sindall, C. S. Thomas, E. P. Whitfield.

The follg. Pilot Officers on probation are confirmed in rank:—J. C. Reynolds (May 5); J. E. Pelly Fry (June 6); H. J. Raymond (June 13); J. E. D. Scott, H. Perring, T. C. M. Wigg, K. G. Beauchamp, N. C. Beck, P. H. Macmillan, W. L. M. Merrett, B. C. R. Powell, K. W. McQueen (June 26); G. M. Adams (June 27).

F/O. S. N. Wiltshire is transferred to the Reserve, class A (June 28). (Substituted for the notification in the *Gazette* of July 3); Flt. Lt. A. J. G. Anderson is transferred from class B to class C (June 20); F/O. D. S. King is transferred from class C to class A (May 11); F/O. E. P. Swallow is transferred from class AA (ii) to class C (July 18).

The follg. Flying Officers relinquish their commissions on completion of service (June 26):—I. B. Sherring, L. Swan.

Flt. Lt. I. M. Matheson relinquishes his commission on completion of service and is permitted to retain his rank (July 14).

AUXILIARY AIR FORCE

General Duties Branch

No. 600 (CITY OF LONDON) (BOMBER) SQUADRON.—H. Teesdale-Smith is granted a commission as Pilot Officer (June 25).

Commissioned Armament Officers

Flying Officer.—R. B. Cleaver, to Station Headquarters, Abingdon, 20.7.34. On appointment to a Permanent Commission.

Commissioned Engineer Officers

Flying Officers.—J. E. Atkins, to Home Aircraft Depot, Henlow, 20.7.34. On appointment to a Permanent Commission on transfer from the Stores Branch. C. W. Eaker, M.B.E., to Home Aircraft Depot, Henlow, 20.7.34. On appointment to a Permanent Commission. V. J. Casey, to Station Headquarters, Upavon, 20.7.34. On appointment to a Permanent Commission. F. W. H. Gee, to Station Headquarters, Manston, 20.7.34. On appointment to a Permanent Commission. H. Hipwood, to No. 1 School of Technical Training (Apprentices), Halton, 20.7.34. On appointment to a Permanent Commission. P. McDiarmid, A.F.M., to No. 3 Stores Depot, Milton, 20.7.34. On appointment to a Permanent Commission. H. E. Newing, to No. 1 School of Technical Training (Apprentices), Halton, 20.7.34. On appointment to a Permanent Commission.

Commissioned Signal Officers

Flying Officers.—R. K. Nicholas, to Air Armament School, Eastchurch, 20.7.34. On appointment to a Permanent Commission. J. R. Welsh, A.F.M., to Marine Aircraft Experimental Establishment, Felixstowe, 20.7.34. On appointment to a Permanent Commission.

(c) For the Baghdad centre: The Air Officer Commanding, Iraq Command, Royal Air Force, Iraq Headquarters, Hinaidi, Iraq.

(d) For the Singapore centre: The British Civil Aviation Directorate Representative at Singapore, Royal Air Force Headquarters, Singapore, Straits Settlements.

(e) For the India centre: The Director of Civil Aviation in India, Department of Industries and Labour, Simla, India.

Candidates should give, with their formal application, full details of any qualifications and experience they already possess. Before a licence can be issued, candidates must pass the prescribed medical examination, for which special arrangements will be made where necessary. Copies of the papers set at previous examinations for Second Class Air Navigators' Licences may be obtained from His Majesty's Stationery Office, Adastral House, Kingsway, London, W.C.2, or through any bookseller.

The attention of candidates is drawn to the following: (a) *International Legislation*.—A list of the United Kingdom air navigation regulations, etc., in force, is published in Notices to Airmen, Nos. 2, 40 and 57 of 1934. (b) *Maps*.—The War Office "Manual of Map Reading, Field Sketching and Air Photography" published by His Majesty's Stationery Office, price 3s. net, or 3s. 4d. post free, is recommended as an additional book for study. (c) *Visual Signalling*.—Candidates will be examined in the procedure for flashing and semaphore laid down in Part I of the International Code of Signals, 1932. This procedure will be found in the 1933 edition of "Brown's Signalling." Candidates are recommended to study Chapters II, III, VII, VIII and IX.

A further examination for Second Class Air Navigators' Licences will be held during March, 1935.

An examination for First Class Licences will also be held in March, 1935, at the London centre, if a sufficient number of applications is received. Arrangements will in some cases be made for the written part of the First Class examination to be undertaken at centres abroad if the candidates are able to present themselves in London for the practical tests within the following six months.

COMMERCIAL AVIATION

— AIRLINES — AIRPORTS —

INTERNAL AIR MAILS THIS MONTH

Highland Airways and Railway Air Services Obtain First Contracts. Normal Rates Below Two Ounces

IT is due to the success of one of the pioneers among private internal air lines that Sir Kingsley Wood, the Postmaster-General, has at last decided to inaugurate a system of internal air mails. A year or two ago the whole idea would have been shelved as fantastic, but the Inverness-Orkney experiment, in the hands of Highland Airways, Ltd., has been completely successful, and during this month many of the larger towns in the country will be served by air mail.

Up to a weight of 2 oz., letters and postcards will be carried by either air or ground transport according to the wish of the sender, who must either mark the letter or use the special air mail label. An additional rd. will be charged for every ounce above this weight.

It was almost inevitable that, for a start, the railway companies' own air service should be given the new mail contracts, though such an arrangement might appear to be more than unfair to those private operators who have, so to speak, shouldered all the responsibilities of the pioneer. However, the fact that Highland Airways, Ltd., hold a contract, suggests that the P.M.G. does not necessarily intend to give the mails entirely to the railway concern, and we understand that any companies operating new routes will, in due course, be given every consideration. In the meantime, Mr. Edward

Hillman does not intend to let the matter drop. It will be remembered that he has operated a daily service from Essex Airport (Stapleford Abbots) to Liverpool, the Isle of Man, and Belfast since this service was discontinued by Midland and Scottish Air Ferries.

At present, Railway Air Services operate between Liverpool, Birmingham, Cardiff, and Plymouth, and, in connection, between Birmingham, Bristol, Southampton, and Cowes. However, during next month, when they have obtained delivery of their D.H. 80's (two "Gipsy Six" engines), they will run a daily service from Croydon to Birmingham, Manchester, the Isle of Man, Belfast, Glasgow, and return; it is in connections from this line that the new mail service will prove its value, particularly between such awkwardly placed towns as Belfast and Southampton or Plymouth.

Sir Kingsley Wood has arranged to appoint an "air mail adviser" in order to ensure that the Post Office will be in closest touch with developments. Furthermore, the number of blue air mail boxes will be suitably increased over a wider district and in the provinces. Special posting facilities may be provided, too, in the City and the West End.

Future plans will depend on public support, but there are one or two interesting possibilities "in the air."

CROYDON

Air Charter at Railway Fares : Sentimental Journeys : Norwegian Visitors : The International Atmosphere

SOME time between the years 1800 and 1820, De Quincey tells us, it cost 3s. 6d. a mile for a chaise and four. A shilling a mile was to be added to this for gates, postillions and ostlers, and, with natural expenses, the whole thing cost about 5s. a mile.

Capt. Hope, who took delivery of a slightly faster and more comfortable vehicle, an Airspeed Lynx "Courier," last week, tells me that it may be chartered at first-class railway fare. Capt. Hope flew it on its maiden voyage from Croydon to Liverpool the other day in exactly one hour. This was a special charter by Mr. Briscoe, trainer of this year's Grand National and Liverpool Handicap winners, accompanied by Harry Wragg, the jockey.

Flying works out very cheaply if enough seats are booked. For instance, thirty members of the Service Watch Co., Ltd., Leicester, chartered *Scylla* for the firm's annual outing. The machine flew from Croydon to Leicester and then on to Blackpool, and took the party home again later. The cost worked out at 3d. per mile per passenger. Last Saturday afternoon Imperial Airways, Ltd., had two large parties at the Airport. One was the Institute of Costing Accountants, sixty of whom flew, and the other consisted of members of teams entered for the "Empire Games."

Olley Air Service, Ltd., has undertaken a variety of different jobs lately. Amongst them were trips by fond relations to meet passengers coming from abroad by *Scylla*; supplementary journeys from Croydon to Cowes on behalf of Spartan Air Lines, Ltd., who appear to be carrying full loads of passengers all the time; journeys to Deauville from Gatwick and back for a client with residences at both spots; and, finally, there was a family flight to Jersey, in order to select their hotel.

Thirty Dundee men flew by Imperial to Le Touquet for no other reason than to lunch on the beach, on fare provided by Imperial catering department. There is something quaint about taking English food to a foreign country (especially

France), and devouring it there with insular contempt for the "cuisine" of the country.

Three Norwegian military aeroplanes arrived on July 26. One of those on board was Major Tryggve Gran, who made early aviation history by flying from Scotland to Norway in a Blériot monoplane in July, 1914. During the war, 1914-18, he served in the British Royal Flying Corps. These Norwegian Fokkers were fitted with Armstrong Siddeley engines, and after the party had been welcomed here by representatives of the R.A.F., they flew to Coventry. Later, it is understood, they are to fly home across the North Sea.

If one spends one's life at Croydon Aerodrome one fails to realise the interest the place has for strangers. What most impresses the majority of visitors is the international atmosphere. Recently one was able to point out to a visitor the differences in pilots' uniform amongst the British, French, Belgian, Dutch and German merchant skippers of the air. He was surprised to note that the most sombre uniform, unrelieved by shiny buttons or gold braid, was that of the Germans, popularly supposed to be a uniform-loving race. He saw a Dutchman, a Russian, a German and an Englishman all wearing Royal Dutch Air Lines uniform, sitting grouped around the coffee cups, and he also learned that the London representatives of "Air France" and "The Royal Dutch" were respectively an Englishman and a Dutchman, whereas the French company had a French Airport manager and the Dutch firm an English one at Croydon. When he was told that Imperial Airways, Ltd., had a French Paris manager and that it was no unusual sight to see Indian "trainees" in turbans at Croydon, he departed convinced that the League of Nations should build a palace near the Airport, as there was more to be learned about international harmony and good fellowship at Croydon in half an hour than at Geneva in half a year.

A. VIATOR.

HESTON

Airwork at Newtownards : A Customs Record : The New Generation

ARRIVING home from Belfast after a week's work, paving the way for the Airwork Flying School at Newtownards, Flt. Lt. Bryant brought encouraging news of the local attitude to aviation. Even the cows, which still frequent the air-port-to-be, are well-trained beasts with no tendency to gallop. The children have yet to be educated, and two policemen were constantly on duty during the demonstration week, shepherding them in flocks.

Persons older, and more immediately useful to aviation, came in good quantities, and Flt. Lt. Bryant gave about twenty-five trial lessons and a number of joy-rides in a week during which he had as much flying as he could tackle single-handed, and even found it necessary to turn away prospective pupils at busy moments.

Mrs. Spencer Cleaver, who accompanied the instructor from England, enlisted many prospective pupils by her energetic efforts. Flt. Lt. Bryant was entertained at the Ulster Club—an august institution—by Capt. D. C. Lindsay, and soon found himself surrounded by an enquiring group of people interested in the Airwork Newtownards venture, prominent among them being Mr. J. M. Andrews, Minister of Labour in the Northern Ireland Parliament. Some interesting views were expressed on air transport possibilities. A general keenness

was apparent, with a lack of knowledge of the conditions and comfort of travelling in modern cabin aircraft. A helmet-and-goggles still surmounts Belfast's conception of passenger flying, but fast, luxurious and regular air connections with the mainland will, it seems, be well supported, if and when they are achieved, by a business section of the community which requires all these things if air travel is to be any use at all.

A wedding party, consisting of Mr. Morris Jackaman's brother and his wife, piloted by Mr. Jackaman in his Monospar, proved to be the thousandth outward Customs clearance of the year. A significant figure, for the outward clearances for the whole of last year totalled only 725.

"A. Viator," of Croydon, commented in *Flight* upon the natural readiness of children to travel by air, which element their elders were not bred to, and frequently mistrust. His remarks were illustrated this week at Heston when a little girl, described variously as seven to ten years old, arrived unaccompanied upon the aeroplane from Jersey. Still "solo" and self-possessed, she proceeded by Airways bus to Victoria, where someone met her. Rumour states that this is not her first, or longest, unaccompanied expedition. The world's champion high diver travelled to Jersey by airline to give an exhibition—not, however, from the air.

ABERDEEN

Viscount Arbuthnot Opens Mr. Gandar Dower's New Airport at Dyce

A GROUP AT DYCE : From left to right can be seen Viscount Arbuthnot, Lady Maude Carnegie, Lady Arbuthnot, Mr. E. L. Gandar Dower, Lord Carnegie and Capt. A. C. S. Irwin.

ON Saturday the new Dyce Aerodrome at Aberdeen was opened by Viscount Arbuthnot. It was an event of the first importance in the annals of that city, and the crowds that poured out to Dyce would have done justice to a cup-tie.

A squadron of Hawker "Nimröds" from Leuchars gave a perfect display of flying, including converged bombing, aerobatics, and formation flying. There was a "fly past" by Aberdeen Airways and by the flying club machines, providing a very mixed bag, including a "Dragon," a "Scion," a "Puss Moth," a Klemm "Swallow," and a "Bluebird." There were, too, several competitive events for which handsome prizes were given.

The arrival competition was won by Capt. Fresson, of Highland Airways, his time of arrival coinciding exactly with that in the sealed envelope. The handicap race was won by Capt. Max Findlay, of Brooklands, on that veteran "Puss Moth," *Amateur Adventure*—a very popular win by a native of Aberdeen.

There was, in addition, a balloon-bursting competition and a parachute jump—the latter being highly spectacular in the strong wind, the parachutist landing within a few feet of a stone wall with his forward nearly as high as his downward speed.

In his opening speech Lord Arbuthnot said that this private enterprise deserved the greatest credit as it would eventually provide Aberdeen and the district with a first-class airport.

"The aerodrome," he said, "would not only give the people of this part of the country a new pleasure but it would also be a benefit to the country in time of emergency."

The official proceedings concluded when Lady Arbuthnot presented the prizes, but joy-riding continued until the staff were obliged to close down in order to attend the evening festivities.

Mr. E. L. Gandar Dower is to be congratulated on his efforts, and deserves every success in the future. The affair was successfully arranged at very short notice by Col. H. Delacombe and Mr. O. Cathcart Jones.

New London-Continental Beacons

Luminous beacons have been established at Merle (2½ miles N.W. of Edenbridge), at Brenchley (6 miles E. by N. of Tunbridge Wells), and at Bethersdon (5½ miles W. by S. of Ashford), and these will be operated until further notice. Each

exhibits a flash of 0.12 second every three seconds, and has a clear weather range of 45 miles. Red identification lights, having a three second period and a range of eight miles, are allotted to each, the code letters being "T" for Merle, "M" for Brenchley, and "O" for Bethersdon. Three more links in the night-flying chain.

COMMERCIAL AVIATION NEWS

Ringway It Is

By a margin of one vote Manchester City Council has agreed to the scheme for the new airport at Ringway, which, it is hoped, will be ready early next year.

Blind Flying for "B" Licence

In future applicants for the public transport pilot's licence must be tested on their ability to fly "blind." This test will consist of a thirty-minute flight under the hood, during which the applicant must maintain his line of flight and carry out all ordinary manoeuvres.

Air Mail to the Canary Islands

Last Saturday a weekly air mail service to the Canary Islands via Paris and Seville was started. From three to four days will be taken to Las Palmas. The postage rates are: letters, 4d. for the first ounce, and 3d. for each additional ounce, and postcards 2½d.

Air Mail to South America

An air mail service to South America via Germany now operates weekly (each Friday), and not fortnightly, as before.

Air mail letters for this service should be posted in time for the 5.30 p.m. collection on Friday from the ordinary street boxes in the London Head District areas, or at 4 p.m. in the Sub-District areas; they may also be posted up to 8 p.m. in the blue Air Mail box at the Head Post Office, King Edward Street, E.C.1, and about an hour earlier in the Air Mail boxes in the London Head District areas.

Jersey Airways' Quarter Million Miles

Since the service began from Portsmouth in December, 1933, with on D.H. "Dragon," Jersey Airways, Ltd., have covered 272,000 miles and carried 9,000 passengers without accident. The fleet now numbers eight "Dragons," and an order has been placed for two De Havilland machines of the four-engined "Diana" class, which the company hope to put into work before the end of the year.

Every Monday and Thursday a special service is run between Jersey and Paris, and in due course an aerodrome will be laid out near St. Helier, so that there will no longer be "tidal" difficulties with the time-table. Jersey will then become, as it should be, the centre of operations and maintenance.

New Charter Company

Private or Press charter work is carried out at remarkably low rates by Maddox Airways, of 37, Gracechurch Street, E.C.3 (Mans. 0736), who keep a "Puss Moth" at Brooklands, a "Leopard" at Heston, and a "Dragon" at Croydon. The rates are based on machine mileage, irrespective of the number of passengers, and are fixed at 8d. a mile for the smaller machines, and 1s. 6d. a mile for the "Dragon." Another "Leopard" should appear at Croydon during September.

Maddox Airways was started by Mr. E. Long Maddox, a Lloyd's assessor, as a charter business for aviation insurance people, and there are now two pilots—Mr. F. R. Midgley, late of Blackpool and West Coast Air Services, Ltd., and Mr. P. G. Ross.

Birmingham-Cowes Time-table

Now that the new line operated by Railway Air Services has started, the journey between Birmingham and Cowes has been reduced by four hours, and between Liverpool and Cowes by more than seven hours.

Two services are provided on weekdays in each direction, and the time-table is as follows:—

Read Down.			Read Up.	
a.m.	p.m.		p.m.	a.m.
9.35	2.15	Birmingham (Castle Bromwich)	2.00	6.55
10.35	3.15	Bristol (Whitchurch)	1.05	6.00
11.20	4.00	Southampton	12.20	5.15
11.30	4.10	Cowes (Somerton)	12.05	5.00

The return fare between Birmingham and Cowes is 72s. 6d., and passengers on any section may return by rail. Luggage up to 35 lb. per passenger is allowed.

In Egypt

The special Saturday midday race service between Cairo and Alexandria, which is run by the Misr Airwork lines, is definitely a popular one. In future it will be known as the "White Hawk" service, in order to distinguish it from the ordinary daily.

Capt. Spooner, the Misr Airwork chief pilot, brought their new Spartan "Cruiser" over from England early last month.

"Cruiser's" 22,000 Miles Flight

Between May and June Bata's Spartan "Cruiser," with three "Gipsy-Major" engines, flew 21,900 miles over three continents, carrying a Bata commercial expedition led by Mr. A. Meisel. Starting from Zlin, the Spartan, *Cape of Good Hope*, flew to Egypt, the Sudan, and Cape Town. Then, returning to the Sudan, the machine was taken to Mesopotamia, over the Taurus Mountains, to the Balkan States, and back to Zlin. The pilot was Mr. J. Firejknik, and the Spartan is one of a fleet of twenty owned by Bata's, whose agents here are, incidentally, Henlys.

A fortnight ago another Spartan "Cruiser," with "Walter-Junior-Major" engines, was flown over to Czecho-Slovakia by Lt. Col. L. A. Strange, D.S.O.



PUBLICATIONS RECEIVED

Days on the Wing. By Major the Chevalier Willy Coppens de Houthulst, D.S.O., M.C. Translated from the French by A. J. Insall, with a Foreword by Marshal of the Royal Air Force, Sir John M. Salmond, G.C.B., C.M., G.C.V.O., LL.D., D.C.L., illustrated by Leonard Bridgeman. Price 10s. 6d. net. London: John Hamilton, Ltd.

Flying Section 17. By Haupt Heydemark. Translated by Claud W. Sykes. Price 6s. net. London: John Hamilton, Ltd.

Flying Memories. Text and Illustrations by Stanley Orton Bradshaw. Price 7s. 6d. net. London: John Hamilton, Ltd.

Planes of the Great War. 50 of Howard Leigh's Popular Prints, reproduced by Colotype. Price 7s. 6d. net. London: John Hamilton, Ltd.

Through Russia by Air. By John Grierson, R.A.F.O. With a Foreword by Sir Malcolm Campbell. Price 5s. net. London: G. T. Foulis & Co., Ltd.

Halton Belgium Party, 1934. Handbook of the 9th Halton and Cranwell Trip to Belgium and the Battlefields.



NEW COMPANIES

BRITISH MOTOR AND AVIATION SERVICES, LTD., Assurance House, Rutland Street, Leicester. Capital, £2,000 in £1 shares. Objects: To acquire the business of a motor and aviation specialist and agent carried on by E. Batchelor at Assurance House, Rutland Street, Leicester. The subscribers (each with 1 share) are: Ernest Batchelor, Assurance House, Rutland Street, Leicester, motor and aviation specialist. William Greaves, Woodgate, Leicester, automobile engineer. Ernest Batchelor is permanent governing director subject to holding £500 shares or stock, with remuneration as fixed by the company. Solicitor: R. Sutton Clifford, Jnr., Loughborough.

INCREASE OF CAPITAL

POBJOY AIRMOTORS LTD., (Hooton Park, Wirral, Ches.). The nominal capital has been increased by the addition of £301-2-0 beyond the registered capital of £10,400. The additional capital is divided into 6,022 founders shares of 1/- each.



AERONAUTICAL PATENT SPECIFICATIONS

Abbreviations: Cyl. = cylinder; i.c. = internal combustion; m. = motors. (The numbers in brackets are those under which the Specification will be printed and abridged, etc.)

APPLIED FOR IN 1932

Published August 2, 1934.

28746. A. F. LAGO. Driving the air compressors and propellers of aircraft engines (413,005.)

APPLIED FOR IN 1933

Published August 2, 1931.

7623. J. DE LA CIERVA. Aircraft with freely rotative wings. (413,069.)
32944. C. DORNIER. Rotatable supporting-wing arrangements for aircraft. (413,181.)

APPLIED FOR IN 1934

Published August 2, 1934.

4781. DORNIER-METALLBAUTEN GES. and C. DORNIER. Landplanes. (413,237.)



DIESEL AIRCRAFT ENGINES.

DIESEL aero engines are reviewed and illustrated in a special chapter of "The Modern Diesel" handbook, published by Iliffe & Sons Ltd., 3/6 net, or by post 3/9. Accompanying the chapter is a table showing the principal characteristics of eleven different types of Diesel aircraft engines. Copies of "The Modern Diesel," containing 194 pages and 130 explanatory diagrams and illustrations, may be obtained from Flight Offices Dorset House, Stamford Street, London, S.E.1.